

JAN 21 1999

DE-9J

Mr. Frank D. Smith  
Senior Geologist  
DuPont Engineering  
Corporate Remediation  
Barley Mill Plaza, Building 27  
P.O. Box 80027  
Wilmington, Delaware 19880-0027

Re: Facility Workplan Comments  
DuPont-East Chicago, Indiana  
IND 005 174 354

Dear Mr. Smith:

Pursuant to the Corrective Action Order (Docket Number: 5-RCRA-97-007), the United States Environmental Protection Agency (U.S. EPA) is providing for your consideration the enclosed comments on the subject deliverable.

When you have had time to address these comments in writing, we will set up a conference call or a meeting in Chicago to discuss them in detail, before the Workplan is revised. According to Section X, paragraph 3 of the Corrective Action Order, DuPont has sixty (60) days to submit a revised Workplan to the U.S. EPA. This should provide ample time to approve the Workplan and schedule some field activities this summer.

Please be advised that once the comments have been addressed in writing, in addition to the Workplan, the detailed Quality Assurance Project Plan (QAPP) should be submitted as a stand alone document. If you feel the need to have a subsequent pre-QAPP meeting, please let me know. I will then coordinate with Brian Freeman, our senior chemist, to schedule the meeting as soon as possible.



If you have any questions regarding these comments, please feel free to call me at (312) 886-6194.

Sincerely yours,

Allen T. Wojtas, Project Manager  
DuPont-East Chicago, Indiana Facility

Enclosure

cc: Chris Myer, IDEM w/enclosure  
Hilton Frey, DuPont w/enclosure

DRE-9J/AW:be/filename:rficom.ltr

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
<i>Be 1/21/99</i>					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
<i>AW 1/21/99</i>					





//Signed 11/17/98//

MEMORANDUM

SUBJECT: Entry of RCRIS Code CA100 for all sites under Corrective Action

FROM: Robert Hall, Chief,  
Corrective Action Program Branch

TO: RCRA Senior Policy Advisors, Regions 1-10

The purpose of this memo is to ensure that Regions and States get credit for all Corrective Action that is currently underway. The RCRIS code CA100 (RFI Imposed) is critical for indicating that CA has been initiated.

The Corrective Action Program Branch (CAPB) recommends that CA100 codes be entered (with approximate event dates, if necessary) for all sites that have begun RFIs but where no CA100 codes have been entered into RCRIS. It is very important that the program be able to track all facilities where CA is underway using the CA initiating CA100 event code.

As of August 1998 the RCRIS Data Element Dictionary defines event code CA100 as "The event by which the State or EPA imposes an obligation ... upon the owner/operator of a facility ... to conduct an RFI." This includes obligations via enforcement orders, permits or permit modifications, voluntary instruments, or state analogous programs.

CAPB has become aware that, due to various reasons, CA100 codes have not been entered for all sites where CA is underway. Commonly the reasons include the difficulty in determining the date of the CA100 event. These difficulties include the resources necessary to find the original documents and dates, and cases where no specific initiating documents exist (and thus no dates) because the work began voluntarily.

The CAPB recommends that the RCRIS codes CA100 be entered for these sites, where there is no question that an RFI is underway (using an approximate effective date, as necessary, with a note in the comment field explaining that the event date is approximate and should not be mistaken for true date). The entry of these CA100 codes will greatly assist the program in accurately representing the true state of progress of CA in all Regions.



This is data is important for periodic updates on program progress, such as the Beginning of the Year Plans (BYP), as well as special inquiries such as the expected upcoming Congressional Oversight Hearings (on RCRA CA, spring 99).

If you have any questions, do not hesitate to contact Henry Schuver of my staff at (703) 308-8656. Thank you.

cc: Program Contacts (listed below, via electronic mail)

Addressees:

R1, Kevin McSweeney  
R2, Andrew Bellina  
R3, Maria Vickers  
R4, Richard D. Green  
R5, Norman Niedergang  
R6, Steve Gilrein  
R7, William Spratlin  
R8, Wanda C. Taunton  
R8, Martin Hesmark  
R9, Julie Anderson  
R10, Mike Bussell

Program Contacts:

R1, Ernest Waterman  
R2, Barry Tornick  
R3, Bob Greaves  
R4, Kent Williams  
R4, Wes Hardegree  
R4, Anna Torgimson  
R5, Gerald Phillips  
R6, William Gallagher  
R6, Charles Faultry  
R7 Harriet Jones  
R8, Paul Arell  
R9, Ray Saracino  
R10, Judy Stone  
OECA, Sharon Cullen  
R3, Paul Gotthold  
R5, Willie Harris  
R1, Matt Hoagland





DuPont Specialty Chemicals

DuPont Specialty Chemicals  
Barley Mill Plaza-Bldg. 27  
Lancaster Pike and Rt. 141  
Wilmington, DE 19805

U.S. EPA, Region 5  
Waste Pesticide and Toxics Division  
Enforcement and Compliance Assurance Branch  
77 West Jackson Boulevard, DRE-9J  
Chicago, Illinois 60604-3590

March 9, 1998

Attn: DuPont-East Chicago Project Coordinator

RE: RCRA Facility Investigation Work Plan

Dear Mr. Wojtas:

Pursuant to RCRA Corrective Action Order IND 005 174 254, DuPont is enclosing three copies of the RCRA Facility Investigation Work Plan and associated appendices for your review. Additional work plans have been submitted to your contractor and the Indiana Department of Environmental Management (IDEM). We look forward to discussing the work plan with EPA and IDEM in several weeks. We are in receipt of your comments on the Sediment Characterization Work Plan and are currently reviewing them for inclusion into the work plan.

If you have any questions please feel free to call David Epps at (302) 992-6592 or myself at (704) 362-6628.

Sincerely,

J. Hilton Frey  
DuPont Corporate Remediation Group  
Project Director

cc: Chris Myer, IDEM  
Ross Austin, DuPont  
Kathy Shelton, DuPont  
File



**January 29, 1998 Meeting Agenda**  
**DuPont East Chicago RCRA Corrective Action Project**

**I. Introductions and Meeting Purpose**

**II. Current Conditions Report**

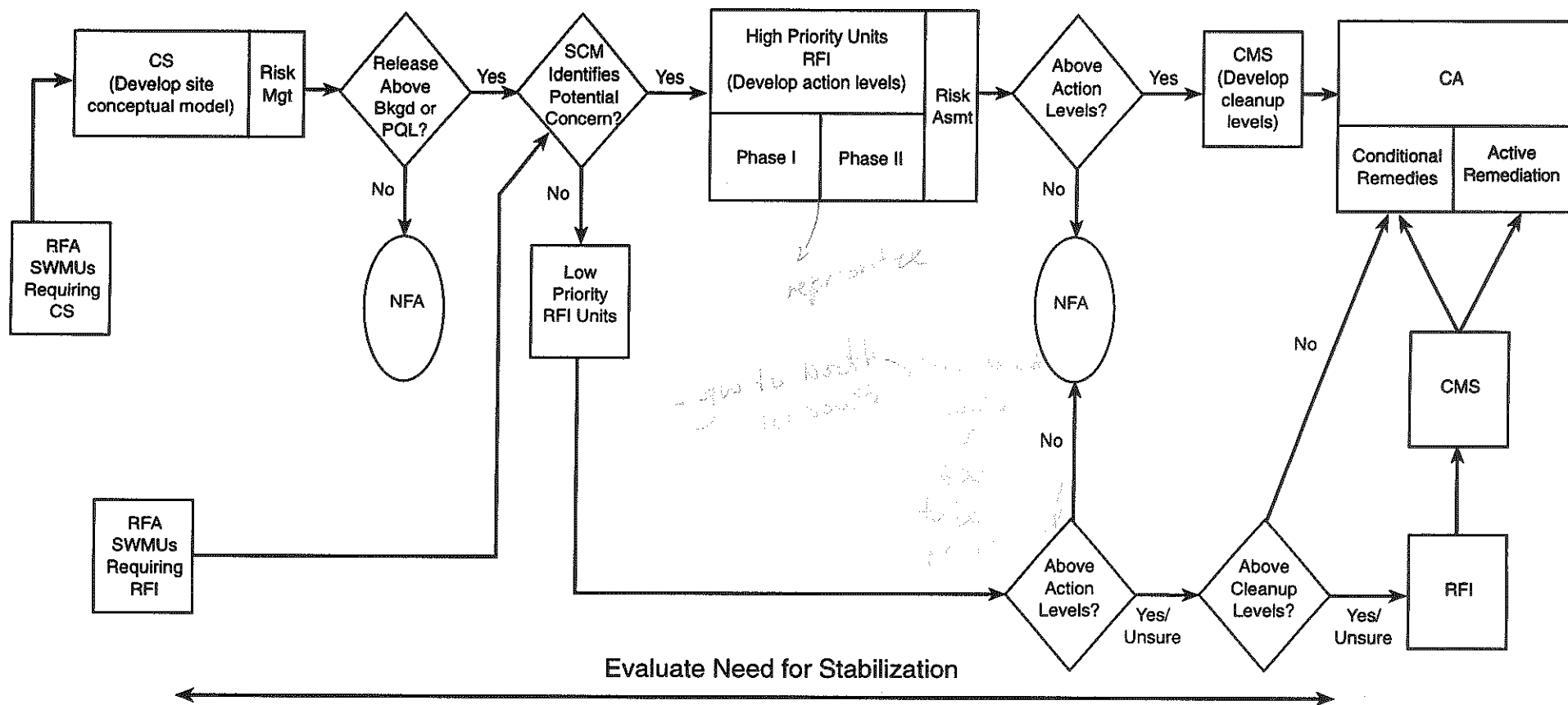
- A. Key Steps Taken
  - 1. Re-evaluation of WMUs in RCRA Context
  - 2. Integration of Information and Data Collected over a 10-Year Period
- B. Outcome - Development of the Conceptual Model
  - 1. Facility History
  - 2. Facility Physical Conditions
  - 3. Environmental Quality Conditions

**III. RFI Work Plan**

- A. Perspective - Where We Are in the RCRA CA Process
- B. Using Prioritization during Work Scope Development
  - 1. Overview of the Prioritization Process
  - 2. Criteria Considered and Example Worksheet
  - 3. Hazard and Potential Pathway Screening - in Concept
  - 4. Groundwater Pool AOCs Screening - in Concept
  - 5. Example Worksheets and Summary of Preliminary Results





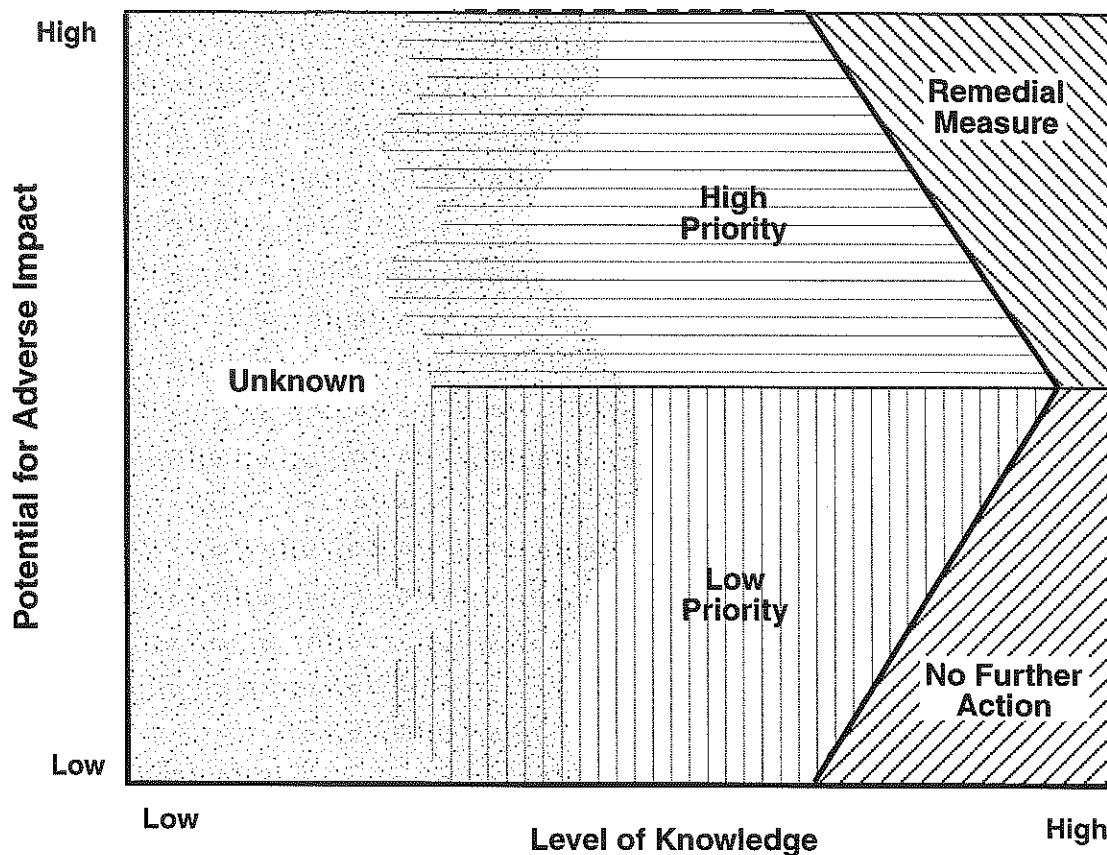


AOC = Area of Concern  
 CA = Corrective Action  
 CS = Confirmatory Sampling  
 CMS = Corrective Measures Study  
 NFA = No Further Action  
 PQL = Practical Quantitation Limit  
 RFA = RCRA Facility Assessment  
 RFI = RCRA Facility Investigation  
 SWMU = Solid Waste Management Unit  
 SCM = Site Conceptual Model

## DuPont's Approach to RCRA Corrective Action Process

DuPont East Chicago RFI Work Plan





## Legend

### Investigation Priorities



Unknown



High Priority



Low Priority

### Post-Investigation Activities



Remedial  
Measure



No Further  
Action

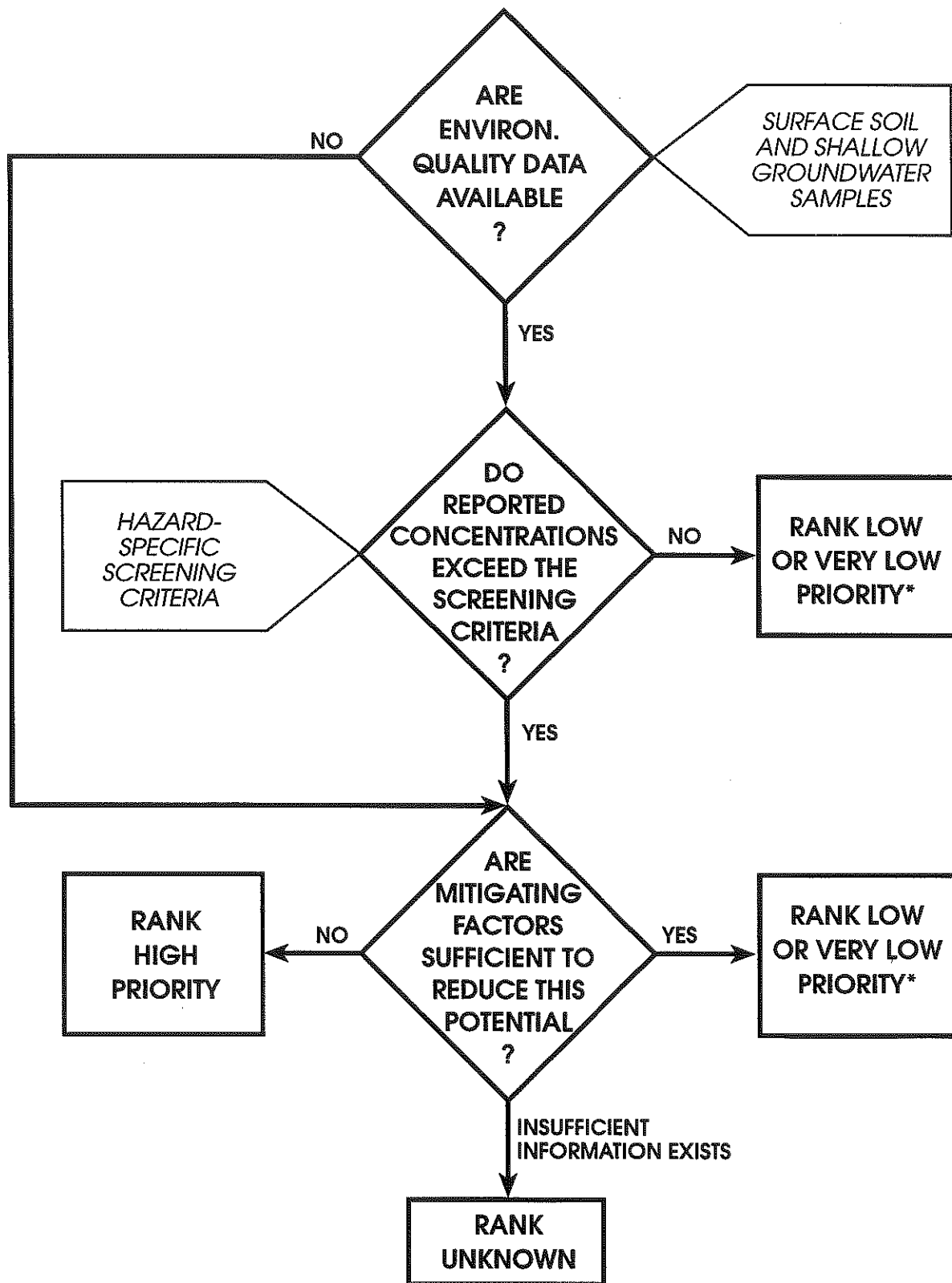


DUPONT - EAST CHICAGO FACILITY - SWMU/AOC PRIORITIZATION WORKSHEET				
SWMU/AOC Name(s) and Number(s):				
Criteria for Prioritization	Ranking for SWMUs/AOCs:			
	U (unknown)	1 (high)	2 (low)	3 (NFA)
Potential Fire or Explosion Hazards:				
Potential for Release to Air:				
Potential for Direct Contact:				
Potential for Release to Groundwater:				
Potential for Release via Surface Water Runoff:				
<p>Rationale for ranking described below—Rationale can include any facts or conditions relevant to the SWMU/AOC itself, potential exposure pathways, potential exposure scenarios, potential receptor characteristics, or conservativeness of the criteria used for screening.</p>				
Potential Fire or Explosion Hazards:				
Potential for Release to Air:				
Potential for Direct Contact:				
Potential for Release to Groundwater:				
Potential for Release via Surface Water Runoff:				



# DRAFT SWMU/AOC PRIORITIZATION PROCESS

## POTENTIAL FIRE AND EXPLOSION HAZARD



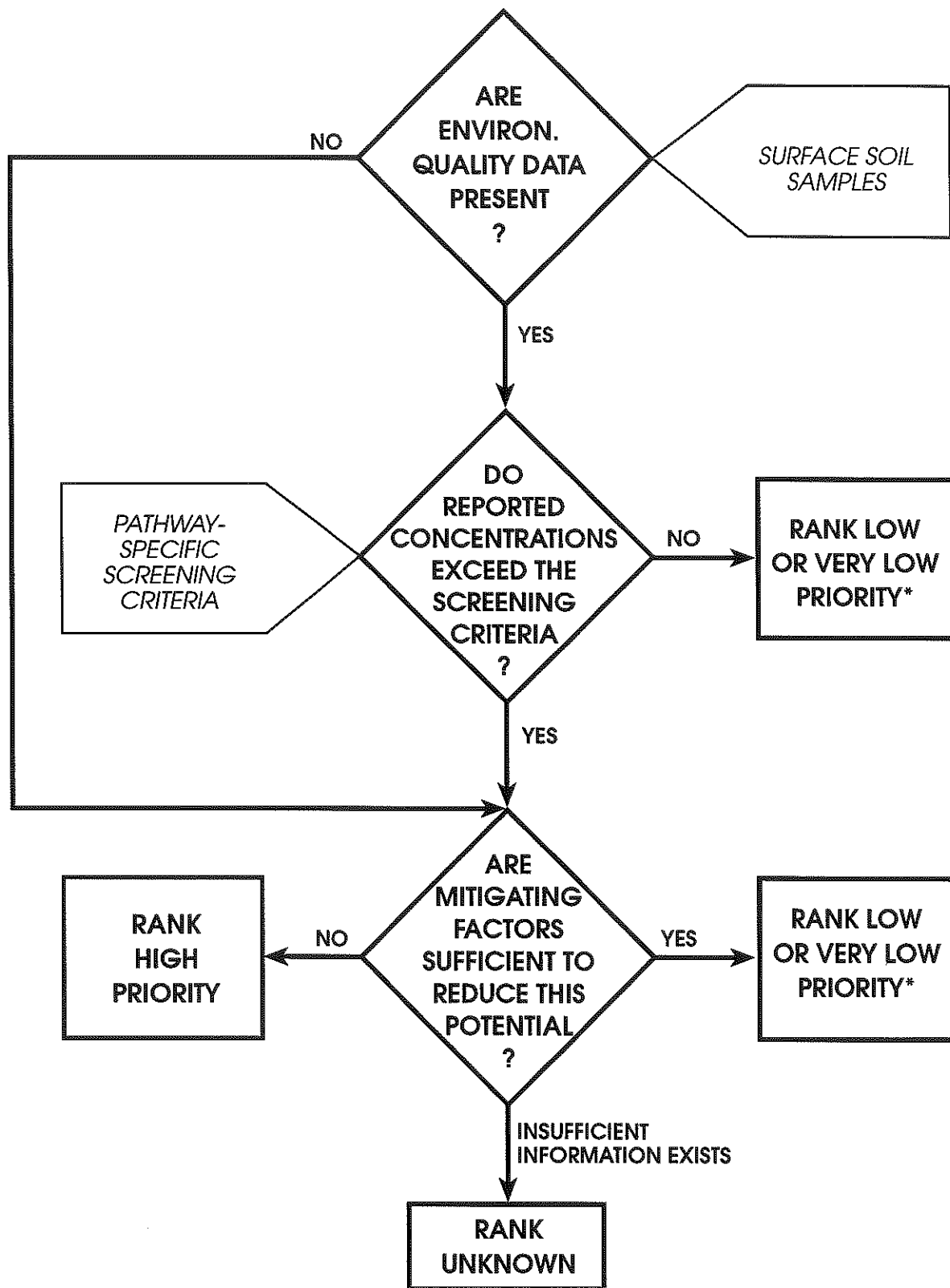
\* NO FURTHER ACTION FOR VERY LOW  
POTENTIAL HAZARD





# DRAFT SWMU/AOC PRIORITIZATION PROCESS

## POTENTIAL FOR RELEASE TO AIR

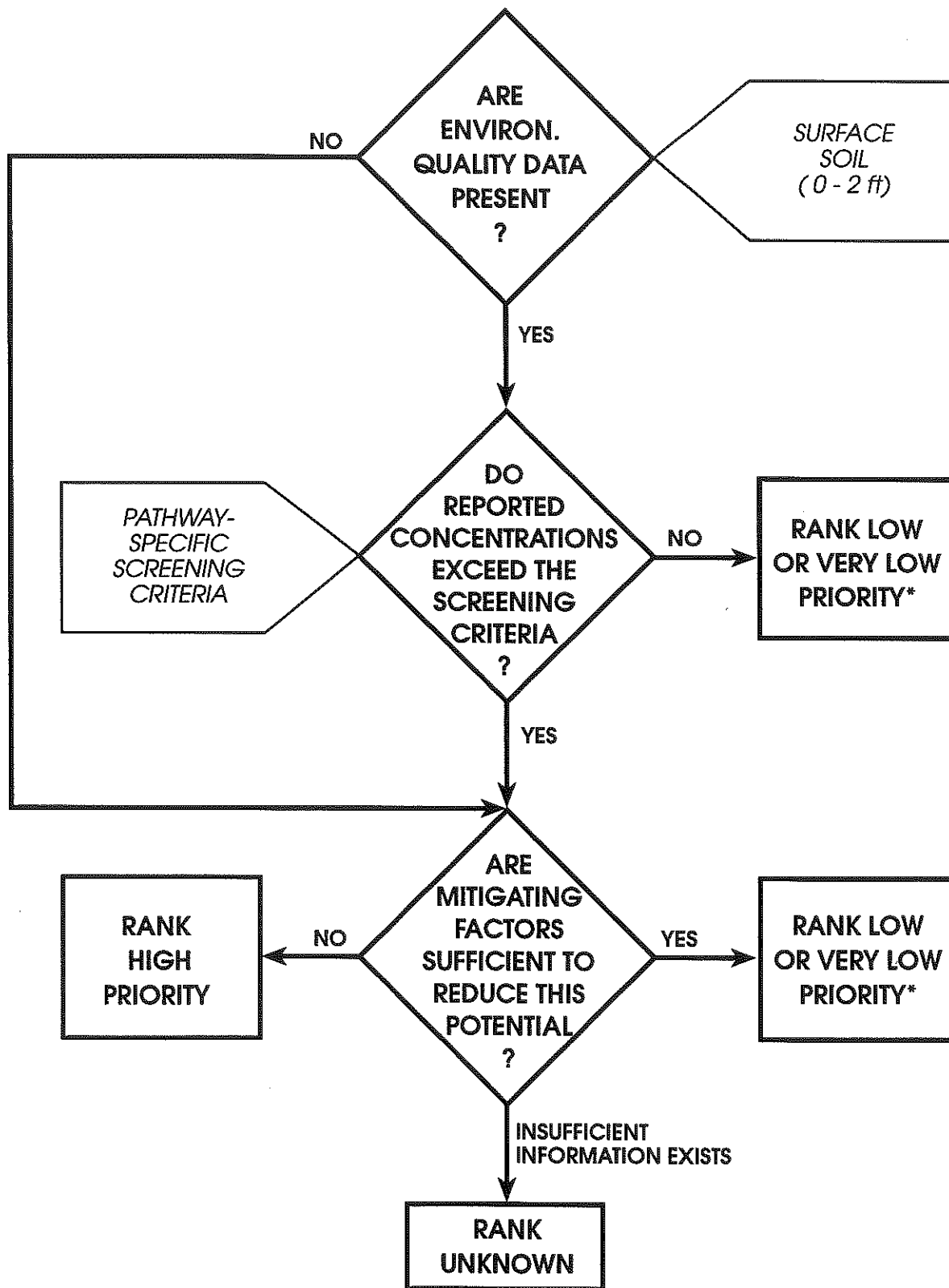


\* NO FURTHER ACTION FOR VERY LOW  
POTENTIAL RISK



# DRAFT SWMU/AOC PRIORITIZATION PROCESS

## POTENTIAL FOR DIRECT CONTACT

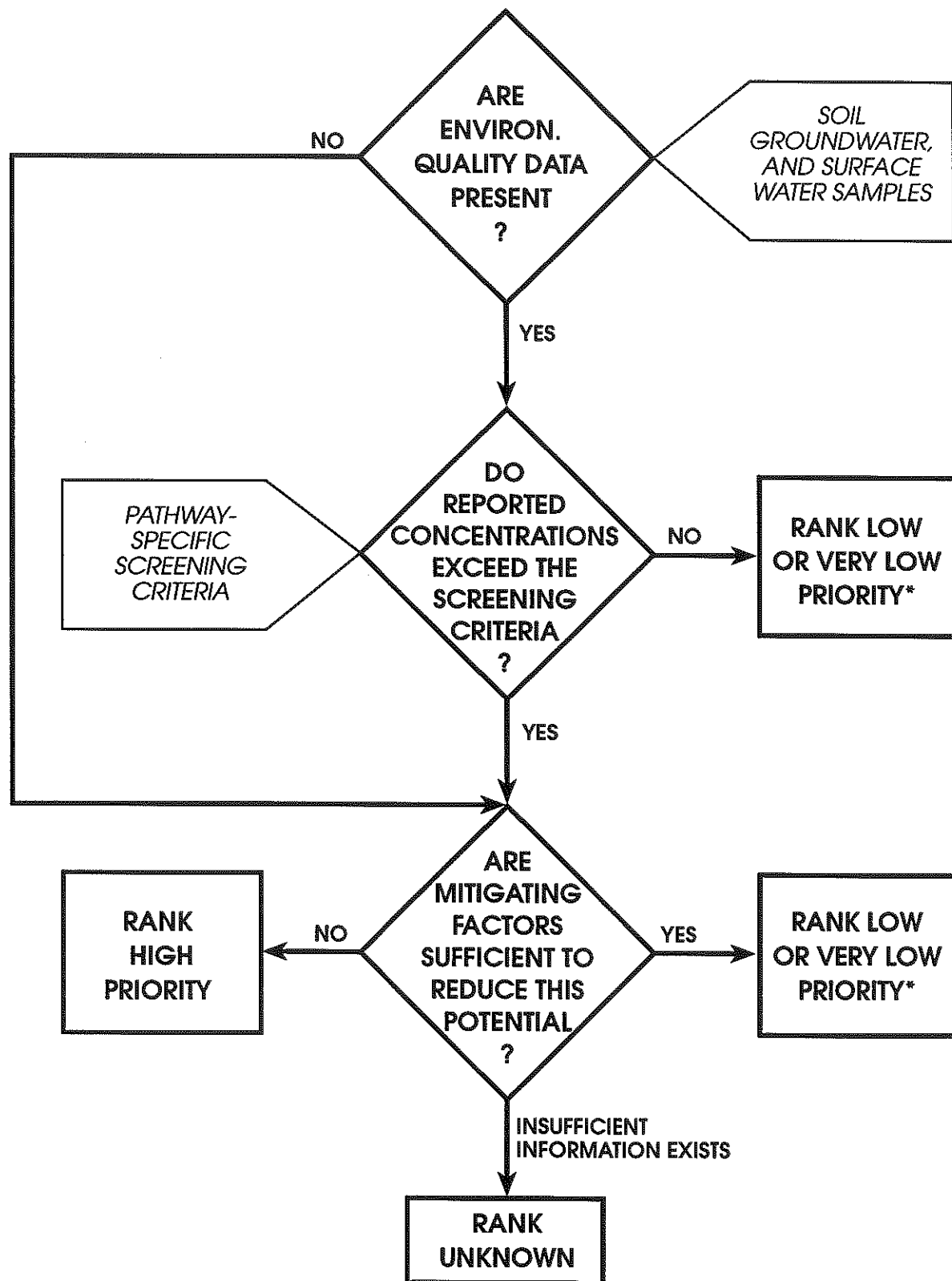


\* NO FURTHER ACTION FOR VERY LOW POTENTIAL RISK



# DRAFT SWMU/AOC PRIORITIZATION PROCESS

## POTENTIAL FOR RELEASE VIA SURFACE WATER RUNOFF

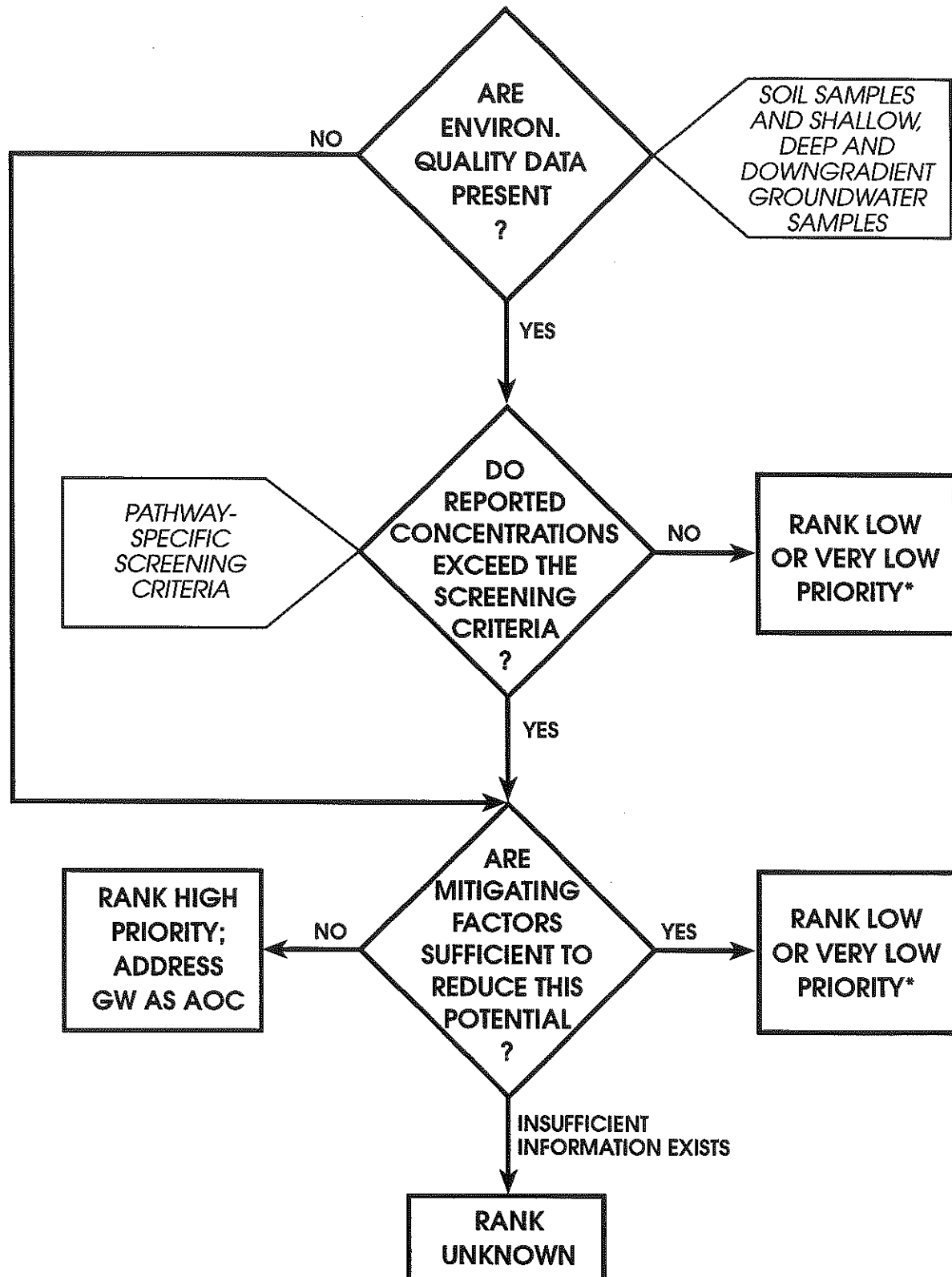


\* NO FURTHER ACTION FOR VERY LOW  
POTENTIAL RISK



# **DRAFT** **SWMU/AOC PRIORITIZATION PROCESS**

## **POTENTIAL FOR RELEASE TO GROUNDWATER**



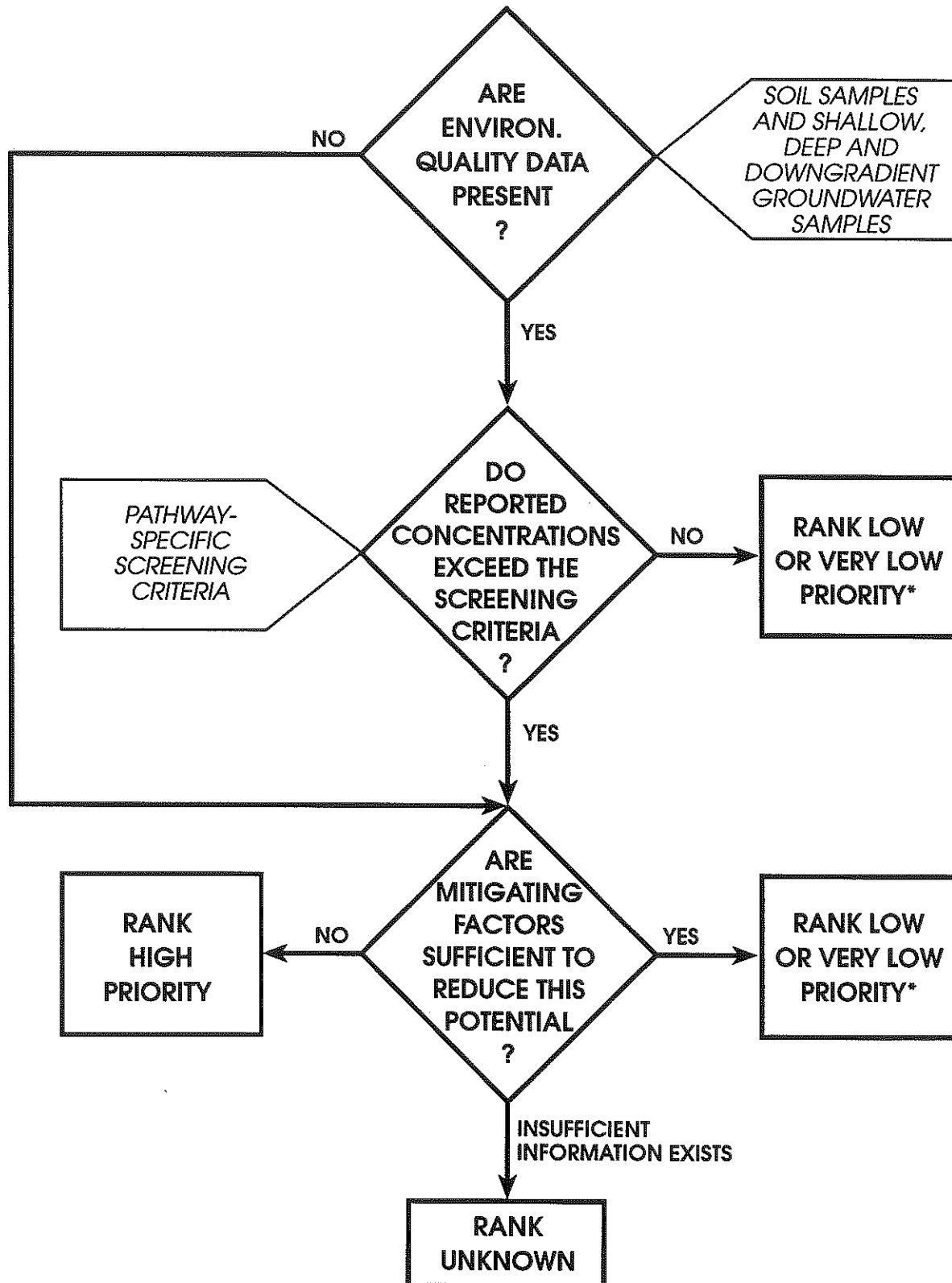
\* NO FURTHER ACTION FOR VERY LOW  
POTENTIAL RISK





# DRAFT GROUNDWATER AOC PRIORITIZATION PROCESS

## POTENTIAL FOR RELEASE SURFACE WATER



\* NO FURTHER ACTION FOR VERY LOW  
POTENTIAL RISK



## Screening Criteria Used in the SWMU/AOC Prioritization Process

### 1. Potential Fire and Explosion Hazard:

*Criteria - Hazard exists if the sum of all ignitable\* compound concentrations are:*

Surface Soil:	Greater Than 1 Percent by Weight
Shallow Groundwater:	Greater Than 10,000 mg/L

\*An Ignitable Compound Has a Flash Point < 140 degrees Fahrenheit

### 2. Potential for Direct Contact:

*Criteria - U.S. EPA Region IX Preliminary Remediation Goals (PRGs)*

Surface Soil (0-2 ft):	Compare to PRGs for Industrial Soil
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### 3. Potential for Release to Air:

*Criteria - Illinois "Tiered Approach to Corrective Action Objectives (TACO) - Table B: Tier 1 Soil Remediation Objectives*

Surface Soil:	Compare to Objectives for Industrial/Commercial Properties
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### 4. Potential for Release to Groundwater:

*Criteria - IDEM July, 1996 Voluntary Remediation Program Resource Guide:  
Table 14*

Soil:	Compare to "Subsurface Soil" Criteria for Protection of Groundwater
All Groundwater:	Compare to "Non-residential Groundwater" Criteria

### 5. Potential for Release via Surface Water Runoff

*Criteria - U.S. EPA January, 1996 EcoUpdate - "Ecotox Thresholds (ETs) for  
Surface Water Quality: Table 2*

Shallow Groundwater:	Compare to ETs for Surface Water Quality (Chronic Ambient Water Quality Criteria [AWQC], U.S. EPA-Derived Final Chronic Values [FCVs], and Great Lakes Water Quality Initiative Tier II Methodology)
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**DUPONT - EAST CHICAGO FACILITY - SWMU PRIORITIZATION WORKSHEET**

SWMU Name(s) and Number(s): SWMU 1C - Rubble Fill Area

Criteria for Prioritization	Ranking for SWMUs/AOCs:			
	U (unknown)	1 (high)	2 (low)	3 (NFA)
Potential Fire or Explosion Hazards:				X
Potential for Release to Air:	X		X	
Potential for Direct Contact:	X		X	
Potential for Release to Groundwater:	X	X		
Potential for Release via Surface Water Runoff:	X	X		

**Rationale for ranking described below—Rationale can include any facts or conditions relevant to the SWMU/AOC itself, potential exposure pathways, potential exposure scenarios, potential receptor characteristics, or conservativeness of the criteria used for screening.**

**Potential Fire or Explosion Hazards:**

Historical manufacturing records indicate that ignitable materials were not handled in this area.

**Potential for Release to Air:**

No source data exist. Facility records do not document the contents of this SWMU. However, access to the unit is reduced by a security fence, the area is in a remote part of the facility, and vegetative growth on the area reduces the potential for material to become airborne. In addition, the length of time since disposal reduces the potential for persistence of VOCs in the environment.

**Potential for Direct Contact:**

No source data exist. Facility records do not document the contents of this SWMU. However, access to the unit is reduced by a security fence, the area is in a remote part of the facility, and vegetative growth on the area reduces the potential for direct contact with unit material.

**Potential for Release to Groundwater:**

No source data exist. However, groundwater sample data indicate a release from the unit. Even though the source of the release is unknown, the evidence below the unit of a probable release causes this SWMU to be ranked high priority for this pathway.

**Potential for Release via Surface Water Runoff:**

No source data exist. Groundwater samples indicate a release to shallow groundwater, but the source is unknown. Vegetative growth on the area reduces the potential for surface transport of contaminants. However, the possibility of groundwater discharge to surface water and high topographic relief on the north edge of the area cause this SWMU to be ranked high priority for this pathway.



## DUPONT - EAST CHICAGO FACILITY - SWMU PRIORITIZATION WORKSHEET

SWMU Name(s) and Number(s): SWMU 14 - Chrome Outfall

Criteria for Prioritization	Ranking for SWMUs/AOCs:			
	U (unknown)	1 (high)	2 (low)	3 (NFA)
Potential Fire or Explosion Hazard:				X
Potential for Release to Air:			X	
Potential for Direct Contact:			X	
Potential for Release to Groundwater:	X	X		
Potential for Release via Surface Water Runoff:			X	

Rationale for ranking described below—Rationale can include any facts or conditions relevant to the SWMU/AOC itself, potential exposure pathways, potential exposure scenarios, potential receptor characteristics, or conservativeness of the criteria used for screening.

**Potential Fire or Explosion Hazard:**

Historical manufacturing records indicate that ignitable materials were not handled in this area.

**Potential for Release to Air:**

This area has been covered with construction debris resulting from the dismantling of plant operations. In addition, the vegetative cover reduces the potential for the material to become airborne.

**Potential for Direct Contact:**

No source data exist. However, the material is covered with construction debris, access to the site is reduced by a security fence, the area is in a remote part of the facility, and vegetative growth in the area will reduce the potential for direct contact with the material.

**Potential for Release to Groundwater:**

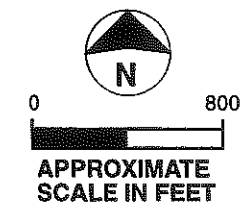
No source data exist. Nearby shallow groundwater samples indicate a potential release from the SWMU. This SWMU will be further addressed as a potential input to the groundwater pool B AOC.

**Potential for Release via Surface Water Runoff:**

This area is covered with construction debris which reduces the potential for surface transport of contaminants.

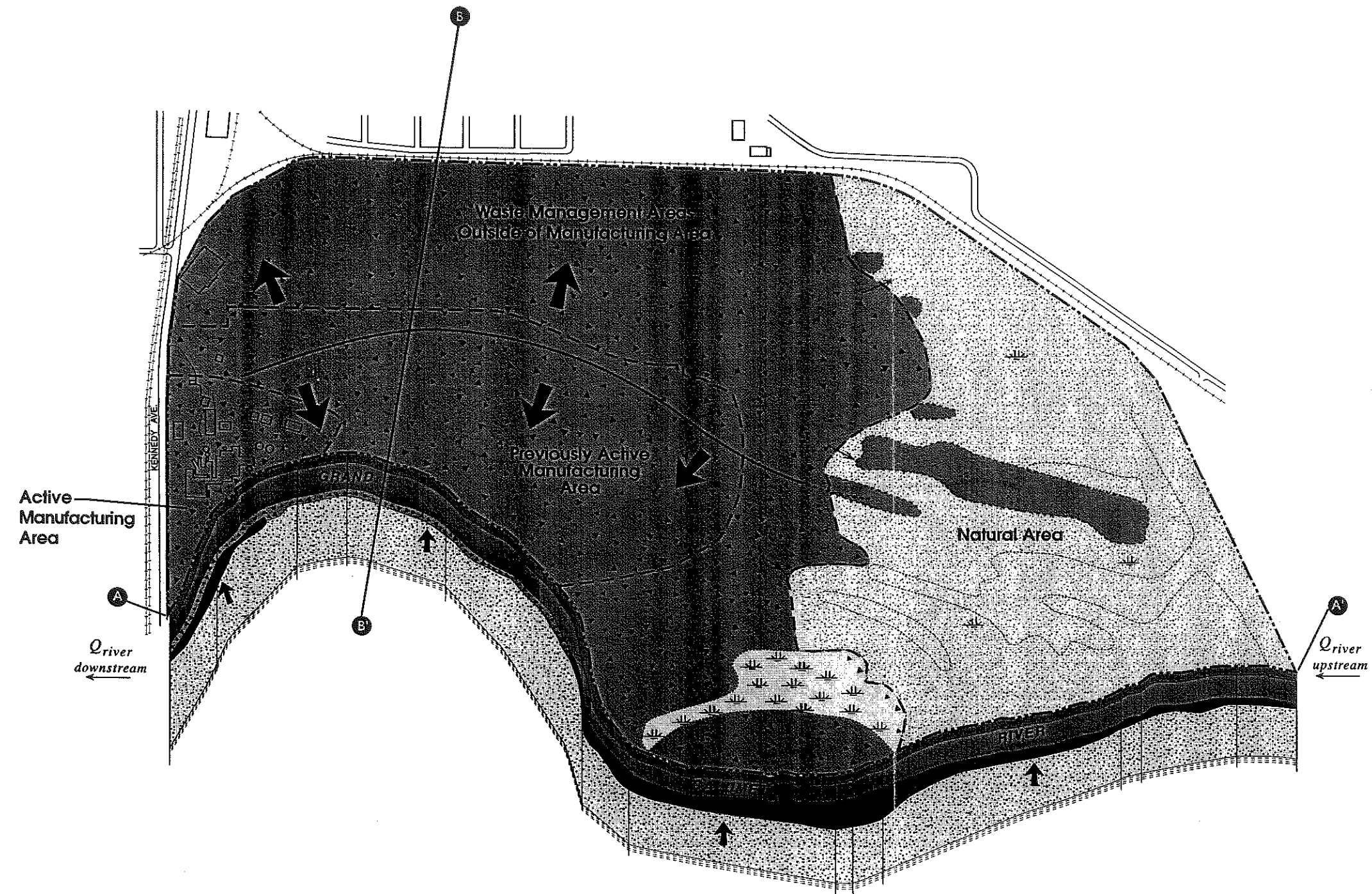






**LEGEND**

- Approximate Location of Groundwater Divide Based on June, August, and November 1990 Potentiometric Surfaces
- Inferred Groundwater Divide
- ← Probable Direction of Groundwater Flow
- ← Surface Water Runoff
- Property Line
- - - Onsite Area Boundaries
- ⊙ ⊙ Cross Section Location
- Peat
- ▒ Fill (bricks, sand, and gravel)
- ░ Grey Brown Fine-Grained Loose Sand (SP)
- ▤ Grey Clay (CL)
- ⋈ Marsh Topography
- Dune & Swale Topography
- ⬮ Standing Water

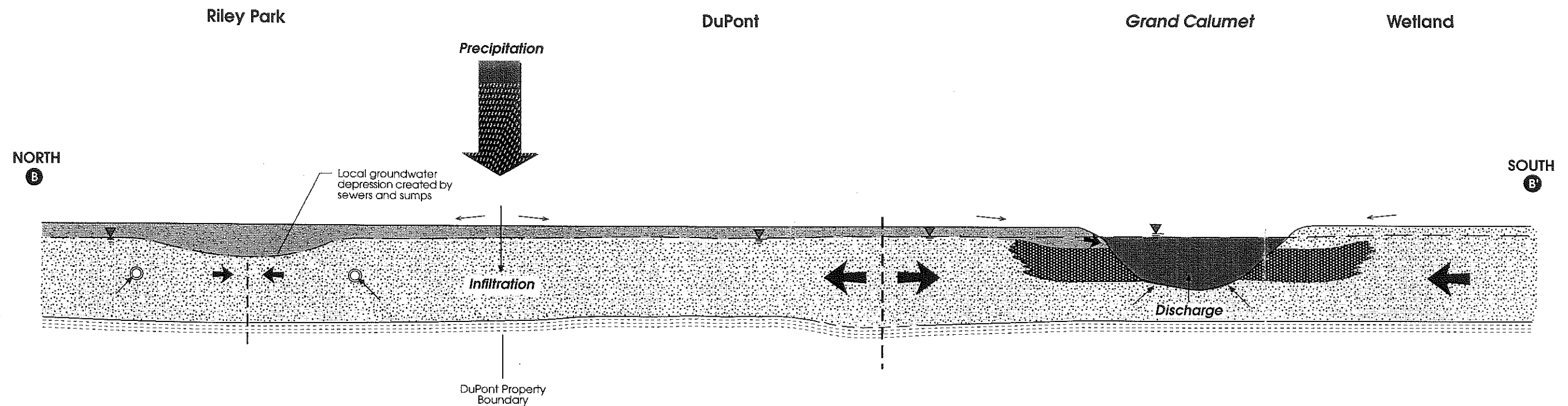


$Precipitation = Infiltration + Evapotranspiration + Runoff$

$Q_{river\ downstream} = Q_{river\ upstream} + Q_{groundwater\ discharge} - Evapotranspiration$

**Conceptual View of Site Hydrology**  
DuPont East Chicago RFI Work Plan

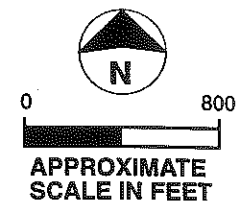
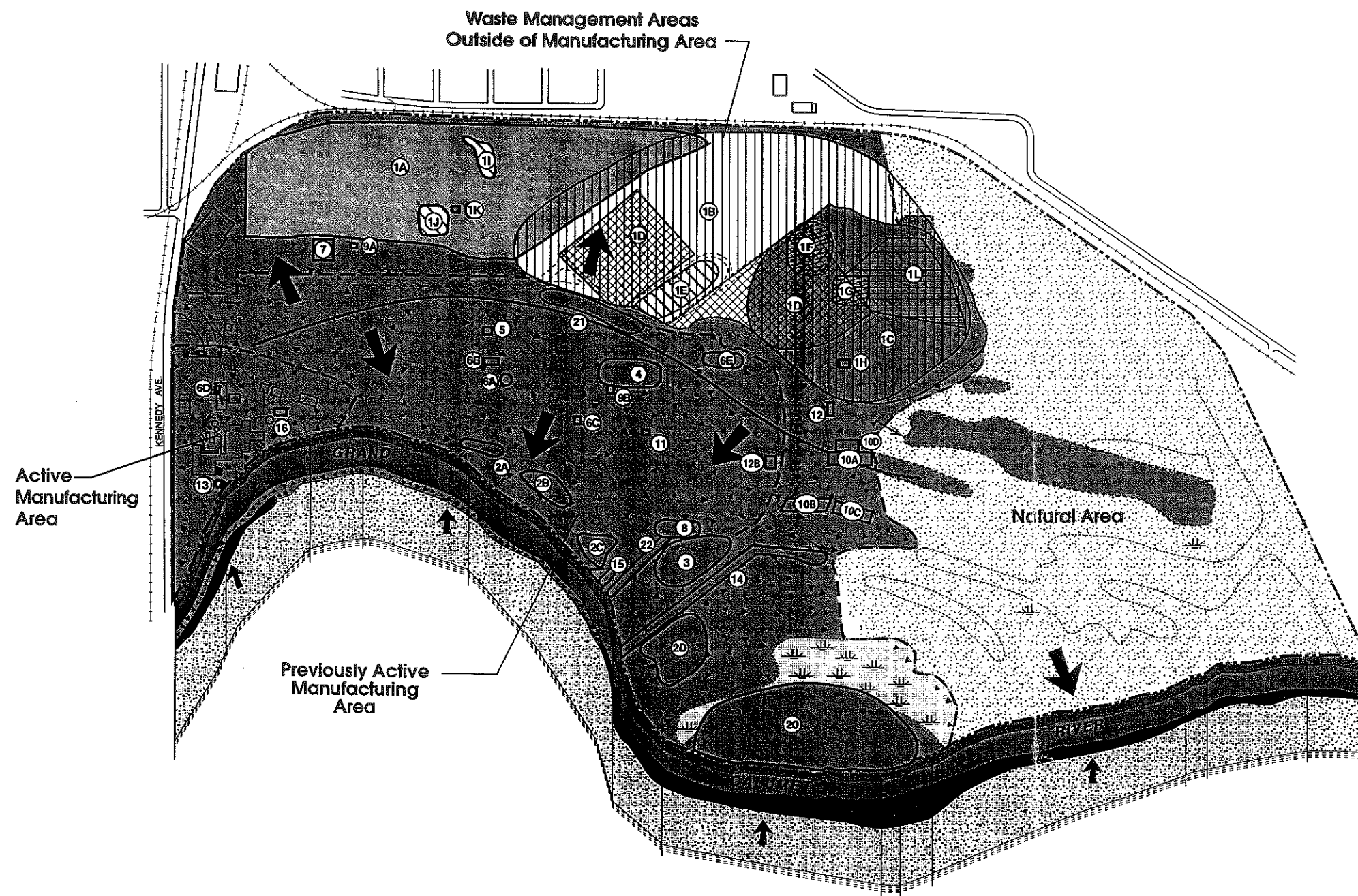




- LEGEND**
- ← Probable Direction of Groundwater Flow
  - ← Surface Water Runoff
  - - - Groundwater Divide
  - ▽ Location of Water Table
  - B—B'** Cross Section Location
  - Peat
  - Fill (bricks, sand, and gravel)
  - Grey Brown Fine-Grained Loose Sand (SP)
  - Grey Clay (CL)
  - Sewer Infiltration

**Section B-B'**  
**Conceptual View of Site Hydrology**  
**Through West Side of Site**  
 DuPont East Chicago RFI Work Plan





# LEGEND

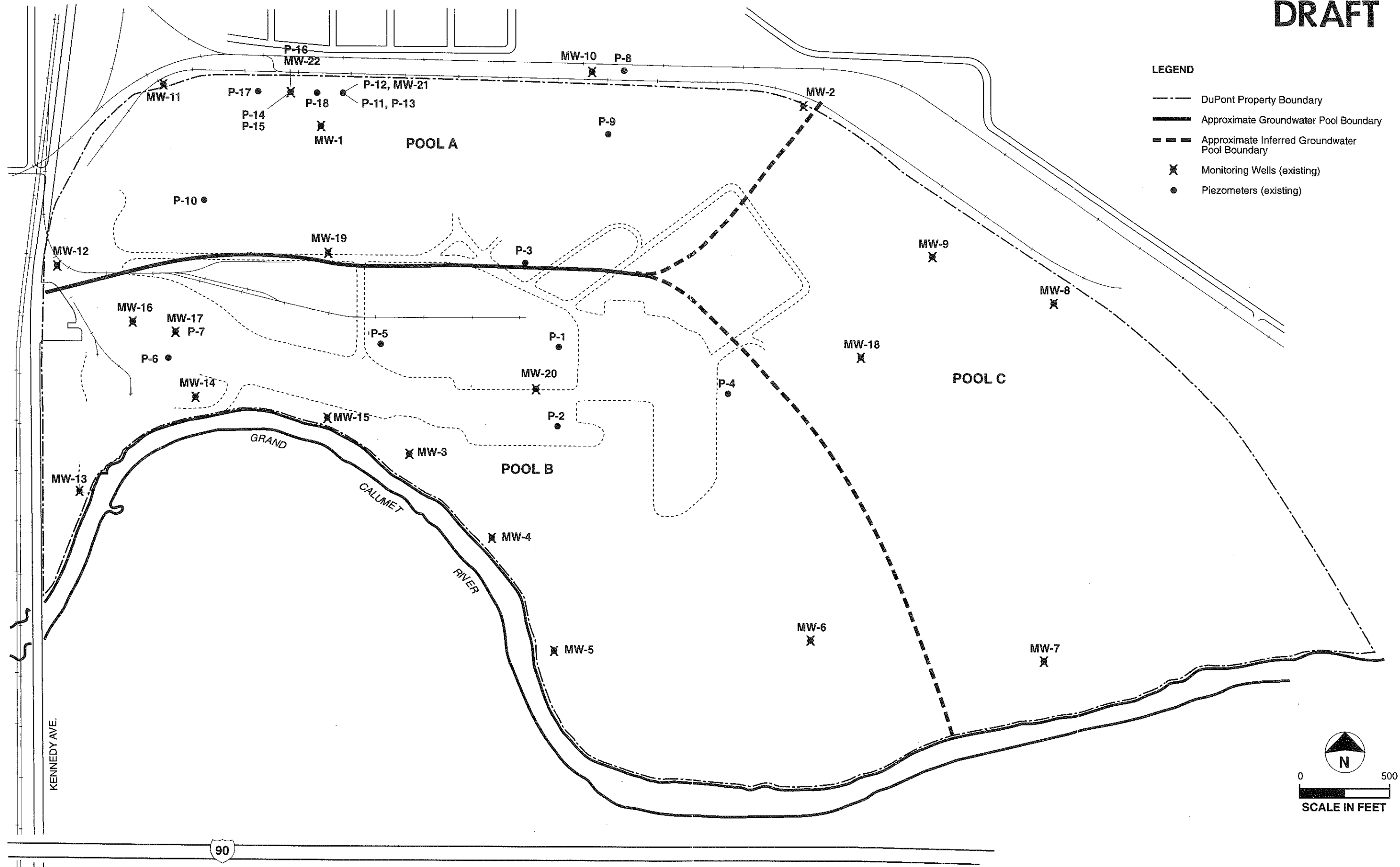
- Approximate Location of Groundwater Divide Based on June, August, and November 1990 Potentiometric Surfaces
- Inferred Groundwater Divide
- ← Probable Direction of Groundwater Flow
- ← Surface Water Runoff
- Property Line
- - - Onsite Area Boundaries
- Peat
- ▨ Fill (bricks, sand, and gravel)
- ░ Grey Brown Fine-Grained Loose Sand (SP)
- ▤ Grey Clay (CL)
- ≡ Marsh Topography
- Dune & Swale Topography
- Standing Water

## Solid Waste Management Units

- 1 Northern Onsite Waste Management Area
  - 1A Ash Landfill/Stoker Grate Area
  - 1B Calcium Sulfate and TSP Area
  - 1C Rubble Fill Area
  - 1D Silica/Calcium Sulfate Area
  - 1E Calcium Fluoride Area
  - 1F Zinc Mud Area
  - 1G General Refuse Areas
  - 1H PCB Storage Area in Rubble Fill Area
  - 1I Miscellaneous Pits and Piles-North
  - 1J Miscellaneous Pits and Piles-South
  - 1K Spill Areas South of Ash Landfill/Stoker Grate Area
  - 1L New Landfill
- 2 Coal and Fly Ash Piles
  - 2A Far West Pile
  - 2B West Pile
  - 2C East Pile
  - 2D Far East Pile
- 3 Disposal Area Near Former Chrome Outfall
- 4 Insecticide Disposal Area
- 5 PCB Electrical Storage Yard
- 6 Hazardous Waste Storage Area
  - 6A Waste Solvent Tank
  - 6B AgChem Drum Storage
  - 6C Reagent Drum Storage
  - 6D Flue Dust Storage in Adhesives Building
  - 6E Flue Dust Storage Near North Warehouse
- 7 Abandoned Chemical Storage Building- "The Morgue"
- 8 Zinc Roaster Sinter Area
- 9 Incinerators
  - 9A Northwest Incinerator
  - 9B Incinerator West of Freon Warehouse
- 10 HCl Neutralization Pits
  - 10A North Pit
  - 10B West Pit
  - 10C South Pit
  - 10D Far North Pit
- 11 Sulfamic Acid Pits (2)
- 12 Antimony Pentachloride Settling Basins
  - 12A North Basin
  - 12B South Basin
- 13 Colloidal Silica Settling Pits (2)
- 14 Former Chrome Outfall and Impoundment
- 15 Former Wastewater Treatment System (Outfall 002)
- 16 Environmental Control System and Outfall 003 (Current Wastewater Treatment System)
- 17 Process Sewers
  - 17A Existing
  - 17B Abandoned
- 18 Sanitary Sewers
  - 18A Existing
  - 18B Abandoned
- 19 Building Maintenance Areas
- 20 I-90 Fill Area
- 21 Lead Arsenate Sludge Disposal Area
- 22 Former River Intake Canal

## Solid Waste Management Unit Location Map DuPont East Chicago RFI Work Plan





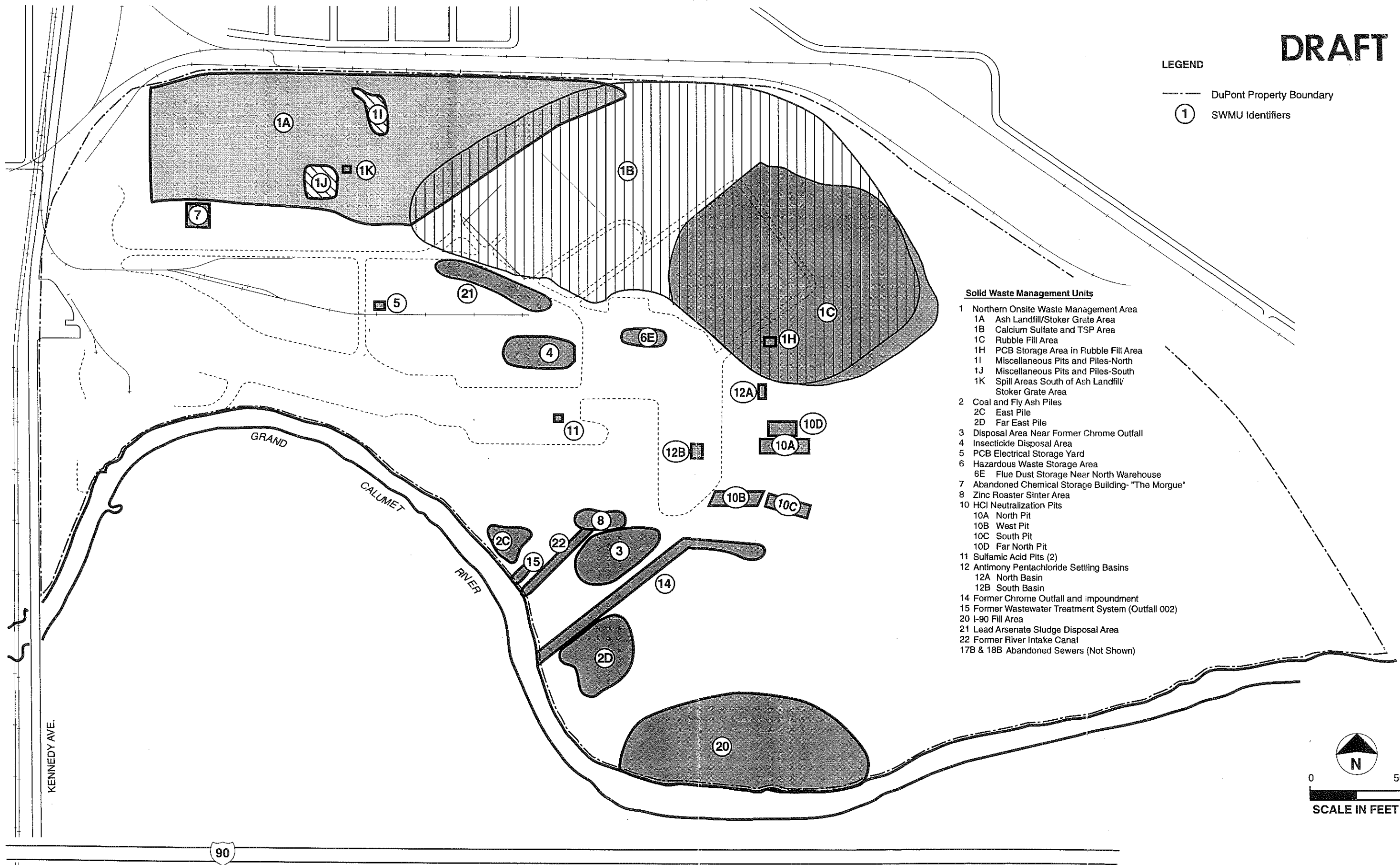
Groundwater Pool AOCs & Existing Monitoring Network  
DuPont East Chicago RFI Work Plan





DRAFT

- LEGEND
- DuPont Property Boundary
  - 1 SWMU Identifiers



- Solid Waste Management Units**
- 1 Northern Onsite Waste Management Area
    - 1A Ash Landfill/Stoker Grate Area
    - 1B Calcium Sulfate and TSP Area
    - 1C Rubble Fill Area
    - 1H PCB Storage Area in Rubble Fill Area
    - 1I Miscellaneous Pits and Piles-North
    - 1J Miscellaneous Pits and Piles-South
    - 1K Spill Areas South of Ash Landfill/Stoker Grate Area
  - 2 Coal and Fly Ash Piles
    - 2C East Pile
    - 2D Far East Pile
  - 3 Disposal Area Near Former Chrome Outfall
  - 4 Insecticide Disposal Area
  - 5 PCB Electrical Storage Yard
  - 6 Hazardous Waste Storage Area
    - 6E Flue Dust Storage Near North Warehouse
  - 7 Abandoned Chemical Storage Building- "The Morgue"
  - 8 Zinc Roaster Sinter Area
  - 10 HCl Neutralization Pits
    - 10A North Pit
    - 10B West Pit
    - 10C South Pit
    - 10D Far North Pit
  - 11 Sulfamic Acid Pits (2)
  - 12 Antimony Pentachloride Settling Basins
    - 12A North Basin
    - 12B South Basin
  - 14 Former Chrome Outfall and impoundment
  - 15 Former Wastewater Treatment System (Outfall 002)
  - 20 I-90 Fill Area
  - 21 Lead Arsenate Sludge Disposal Area
  - 22 Former River Intake Canal
  - 17B & 18B Abandoned Sewers (Not Shown)

**SWMUs with a Prioritization Ranking of High or Unknown**  
DuPont East Chicago RFI Work Plan

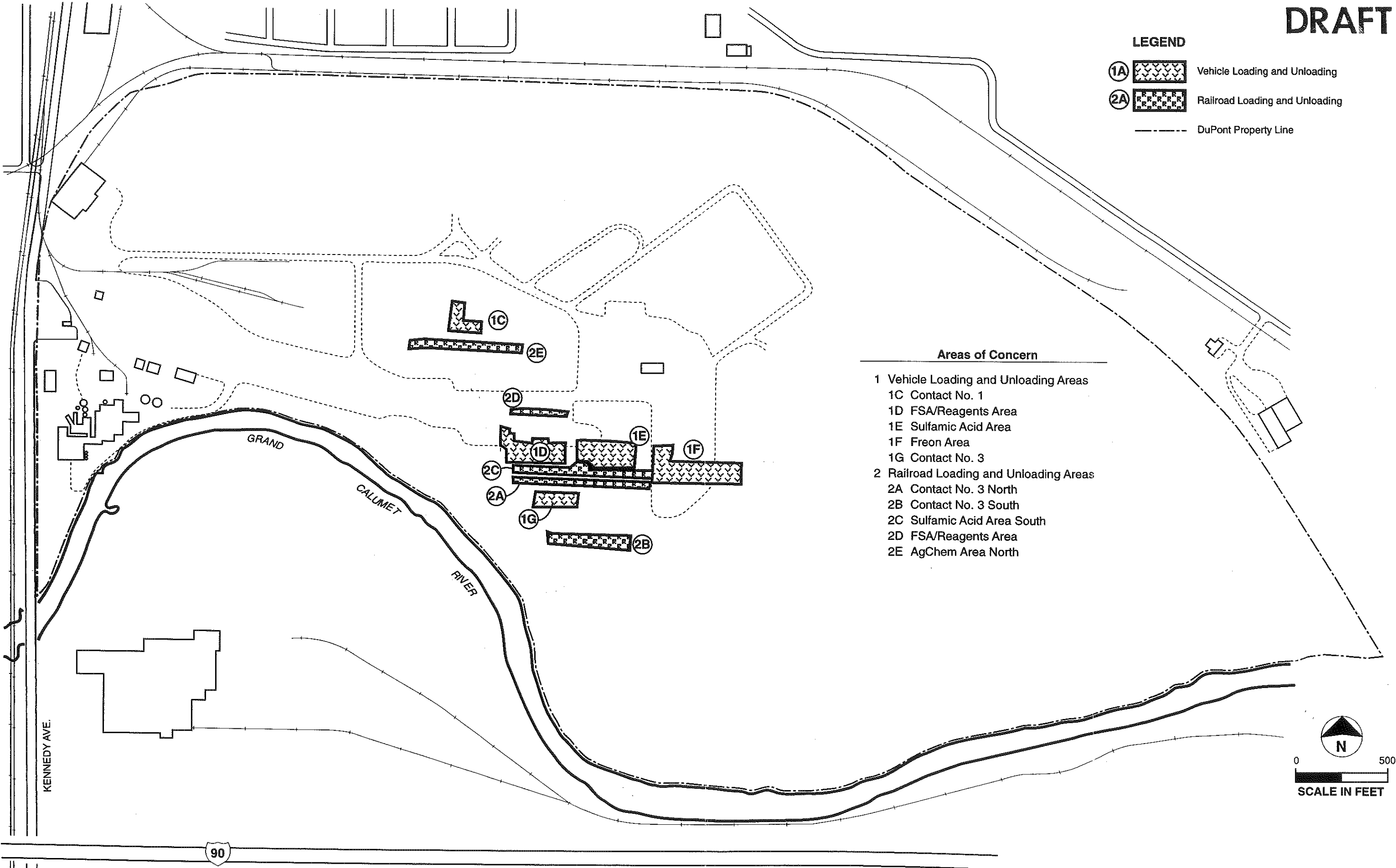


LEGEND

- 1A Vehicle Loading and Unloading
- 2A Railroad Loading and Unloading
- DuPont Property Line

Areas of Concern

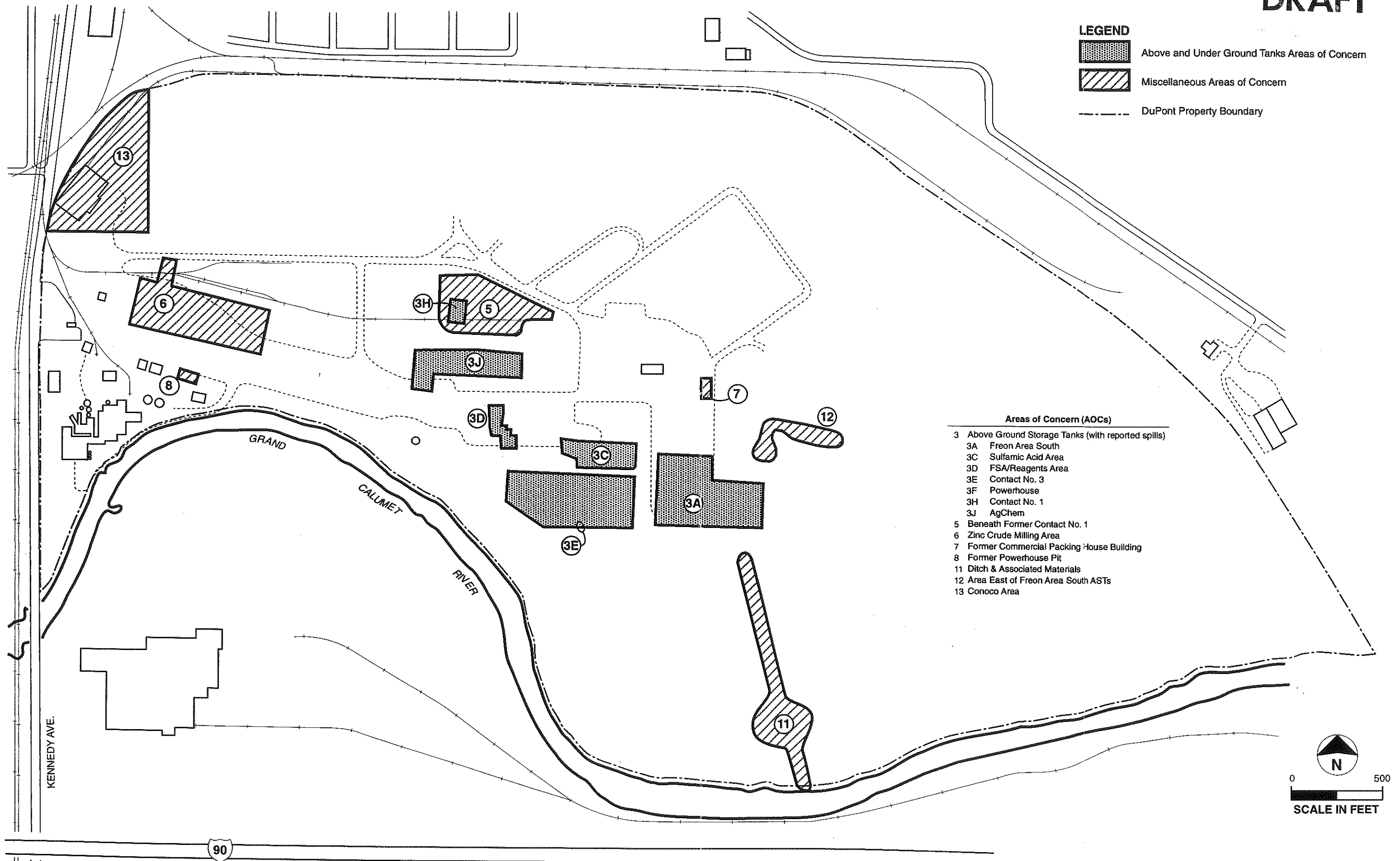
- 1 Vehicle Loading and Unloading Areas
  - 1C Contact No. 1
  - 1D FSA/Reagents Area
  - 1E Sulfamic Acid Area
  - 1F Freon Area
  - 1G Contact No. 3
- 2 Railroad Loading and Unloading Areas
  - 2A Contact No. 3 North
  - 2B Contact No. 3 South
  - 2C Sulfamic Acid Area South
  - 2D FSA/Reagents Area
  - 2E AgChem Area North



Source: CH2M HILL 1990 and U.S. EPA guidance for corrective action

Loading and Unloading AOCs with a  
Prioritization Ranking of High or Unknown  
DuPont East Chicago RFI Work Plan





**LEGEND**

- Above and Under Ground Tanks Areas of Concern
- Miscellaneous Areas of Concern
- DuPont Property Boundary

- Areas of Concern (AOCs)**
- 3 Above Ground Storage Tanks (with reported spills)
  - 3A Freon Area South
  - 3C Sulfamic Acid Area
  - 3D FSA/Reagents Area
  - 3E Contact No. 3
  - 3F Powerhouse
  - 3H Contact No. 1
  - 3J AgChem
  - 5 Beneath Former Contact No. 1
  - 6 Zinc Crude Milling Area
  - 7 Former Commercial Packing House Building
  - 8 Former Powerhouse Pit
  - 11 Ditch & Associated Materials
  - 12 Area East of Freon Area South ASTs
  - 13 Conoco Area

Source: CH2M HILL 1990 and U.S. EPA guidance for corrective action

**ASTs, USTs, and Miscellaneous AOCs  
with a Prioritization Ranking of High or Unknown**  
DuPont East Chicago RFI Work Plan



'JAN 26 1998

DRE-9J

Mr. David E. Epps  
Project Manager  
The W-C Diamond Group  
Barley Mill Plaza 27  
P.O. Box 80027  
Wilmington, Delaware 19880-0027

Re: DuPont-East Chicago Facility  
IND 005 174 254  
RFI Workplan

Dear Mr. Epps:

This letter is in response to your letter dated January 22, 1998, in which you requested an extension for the submission of the RFI Workplan. This Workplan is a requirement of the Administrative Order (5-RCRA-97-007), effective June 25, 1997.

Based on the justification provided in your letter and our conversations, the United States Environmental Protection Agency (U.S. EPA) agrees to extend the deadline for the submittal of the RFI Workplan to March 9, 1998. The submittal should be post marked no later than March 9, 1998. This extension should provide enough time to allow DuPont Company to incorporate any substantive U.S. EPA direction given at our January 29, 1998 meeting into the draft RFI Workplan. Please be advised that this extension does not effect the deadline for other deliverables required by the Order.

If you have any questions regarding this matter, please call me at (312) 886-6194.

Sincerely yours,

Allen T. Wojtas  
Enforcement and Compliance Assurance Branch





**ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH**

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
<i>AW</i> <i>1/26/98</i>					







# The W-C Diamond Group

January 22, 1998

Mr. Allen Wojtas  
USEPA Region 5  
Waste Pesticide and Toxics Division  
DRE-9L  
77 West Jackson Boulevard  
Chicago, IL 60604

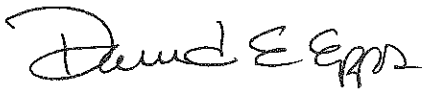
DuPont East Chicago Facility  
RCRA Corrective Action Order IND 005 174 254

Dear Mr. Wojtas:

The purpose of this letter is to formally request an extension of the due date for submission of the RFI Work Plan to March 9, 1998. DuPont is committed to delivering to EPA the highest quality document as soon as humanly possible, and activities to complete the work plan are continuing at a rapid pace. However, the occurrence of three holidays within the original schedule significantly shortened the time available to our resources to prepare the work plan. Therefore we believe an extension of the original due date is necessary to prepare the work plan and subsequent supporting documents (i.e., project management plan, field sampling plan, data management plan, etc.) such that they will meet EPA's expectations as set forth in the Consent Order and our past submittals. This extension would also allow time for DuPont and the agency to meet and discuss the RFI approach being proposed in the work plan.

We look forward to discussing the RFI activities with you and your staff. If you have any questions regarding the RFI or Sediment Investigation please feel free to call me at (302) 992-6592 or Hilton Frey at (704) 362-6628.

Sincerely,



David E. Epps  
Project Manager  
The W-C Diamond Group

cc: H. Frey, DuPont  
File





## Tetra Tech EM Inc.

330 South Executive Drive, Suite 203 ♦ Brookfield, WI 53005-4215 ♦ (414) 821-5894 ♦ FAX (414) 821-5946

December 3, 1997

Mr. Allen Wojtas  
U.S. Environmental Protection Agency (DRE-9J)  
Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604

**Subject: Technical Review Comments on the "Description of Current Conditions Report"  
for the DuPont Company East Chicago Facility  
Contract No. 68-W4-0007, Work Assignment No. R05061**

Dear Mr. Wojtas:

Tetra Tech EM Inc. (Tetra Tech) has reviewed the above-referenced document as part of its oversight activities with the E.I. duPont de Nemours and Company (DuPont) facility in East Chicago, Indiana. The current conditions report (CCR) is dated October 28, 1997. During its review, Tetra Tech found that the CCR lacks detailed, site-specific information associated with the constituents of interest list.

Tetra Tech review comments reflecting these findings are enclosed. An electronic version of this deliverable will be transmitted to you by e-mail; however, this hard copy version is Tetra Tech's official deliverable.

If you have any questions, please call me at (414) 821-5894, extension 236.

Sincerely,

Kurt Whitman, C.H.M.M.  
Project Manager

Enclosure

cc: Bernie Orenstein, EPA (letter only)  
Edward Schuessler, Tetra Tech (letter only)  
Art Glazer, Tetra Tech





**ENCLOSURE**

**TECHNICAL REVIEW COMMENTS ON THE  
CURRENT CONDITIONS REPORT FOR THE  
DUPONT EAST CHICAGO FACILITY**

(Seven Pages)



## **TECHNICAL REVIEW COMMENTS ON THE CURRENT CONDITIONS REPORT FOR THE DUPONT EAST CHICAGO FACILITY**

Under Contract No. 68-W4-0007, Work Assignment No. R05061, Tetra Tech EM Inc. (Tetra Tech) was tasked to technically review the "Current Conditions Report for the DuPont East Chicago Facility" prepared by CH2M Hill, Inc., for E.I. duPont de Nemours and Company (DuPont). Tetra Tech reviewed the current conditions report (CCR), dated October 28, 1997, to evaluate its technical adequacy and compliance with applicable U.S. Environmental Protection Agency guidance. Tetra Tech's general and specific review comments are presented below.

### **General Comments**

1. DuPont should provide information on the groundwater remediation system that will be installed on the northern edge of the property line adjacent to Riley Park.
2. DuPont should provide references for the assumptions or conclusions that are made throughout the document.

### **Specific Comments**

The specific comments refer to specific sections, pages, and paragraphs of the CCR. The first full paragraph on a page is identified as "Paragraph 1." A paragraph that carries over from a previous page is identified as "Paragraph 0."

1. **Executive Summary, Page XII, Paragraph 1.** DuPont should clarify the purpose behind summarizing the frequency of detects in Table 4-5. DuPont should also consider analyzing environmental media samples for organophosphorous and organocarbamate compounds that were historically manufactured at the facility or explain the reason why DuPont did not analyze for these organic compounds.



2. **Chapter 2, Page 2-1, Paragraph 6.** DuPont states that "The northwestern quadrant of the property and the eastern edge of the developed area were used for waste management purposes." This statement does not clearly correspond with the area descriptions presented in Figure 2-3 and the accompanying references. DuPont should verify that descriptions in the text match descriptions presented in Figure 2-3.
3. **Chapter 2, Page 2-2, Paragraph 5.** DuPont states that on-site uplands drain to low-lying areas, many of which connect to off-site area waterways. DuPont has presented data indicating that groundwater is present between 1 and 10 feet below ground surface (bgs); therefore, it is possible that low-lying areas may be hydraulically connected to groundwater throughout the facility. DuPont should present and reference data supporting their contention that the low-lying areas are hydraulically isolated.
4. **Chapter 2, Page 2-3, Paragraph 1.** DuPont states that surface drainage patterns have been altered (see Figure 2-6); however, no detail exists in Figure 2-6 to determine if there are altered drainage patterns. DuPont should provide additional detail on drainage patterns.
5. **Chapter 2, Page 2-3, Paragraph 6.** DuPont states that temporary flow reversals and backup of the Grand Calumet River waterway have occurred. DuPont should provide information on water backup or reversals that have affected the DuPont facility, including the time duration and direction of the occurrence (s).
6. **Chapter 2, Page 2-7, Paragraph 1.** DuPont states that the clay till underlying the Calumet Aquifer acts a confining unit that separates the upper aquifer from the uppermost bedrock aquifer below. DuPont should provide a reference to support this statement.
7. **Chapter 2, Page 2-8, Paragraphs 1 through 6.** DuPont states that (1) depth to groundwater ranges from 1 to 10 feet bgs; (2) an east-west groundwater divide runs through the center of the facility; (3) groundwater flow directions are north of the divide to the Riley Park area and south



of the divide to the East Branch of the Grand Calumet River (East Branch); (4) groundwater and surface water data indicate that groundwater and surface water are hydraulically connected; and (5) at some locations along the East Branch, a groundwater discharge flow reversal may occur from the East Branch to groundwater. DuPont should provide additional data and or references to support its contention that groundwater flows in the direction indicated in the text.

8. **Chapter 2, Page 2-8, Paragraph 6.** DuPont historically discharged about 900 million gallons per day (mgd) to the East Branch; however, the current discharge to the East Branch is about 340 mgd. DuPont should clarify if hydraulic changes from the East Branch to groundwater have occurred when the surface water discharge volume has decreased.
9. **Chapter 2, Page 2-9, Paragraph 1.** DuPont states that they developed a Calumet Aquifer potentiometric surface map from a single round of water level measurements made in the Riley Park sewer manholes. From this data, DuPont determined that a groundwater divide exists in the center of this area. DuPont should (1) clarify the validity in using sewer manhole water levels to determine groundwater levels, (2) provide support for basing the piezometric surface determination on a one time sampling effort at the Riley Park sewers, and (3) provide additional data that supports DuPont's conclusion that a groundwater divide exists in the center of the Riley Park area.
10. **Chapter 3, Page 3-3, Paragraph 0.** DuPont states that outfalls 001 through 003 were used to discharge process wastewater from various production areas to the Grand Calumet River. DuPont should clarify whether this process wastewater was conveyed to the river through open ditches or a pipeline.
11. **Chapter 3, Page 3-5, Paragraph 3.** DuPont should provide a list of the Resource Conservation and Recovery Act (RCRA) hazardous wastes generated from 1996 to 1997.





12. **Table 3-1.** DuPont provides a list of constituents associated with historic or current manufacturing processes, however, DuPont's 1990 "Relevant Information from the Phase I Groundwater Assessment Report, Appendix B--Detailed Production History" presents product information and constituents that are not listed in Table 3-1. DuPont should explain the discrepancies that exist between Table 3-1 and Appendix B--Detailed Production History list. The following constituents are found only in Appendix B:

**Major Inorganics**

- Acids
- Ammonia-based compounds
- Sulfites

**Trace Metals**

- Manganese
- Zinc

**Organics**

- Dimethylhexylamine
- Isocyanates
- Herbicides, not listed
- Hexazinone
- Insecticides, not listed
- 2-Methyl cyclohexylamine
- Methyl-2-benzimidazole carbamate
- Methyl chloroform
- Methyl ethyl ketone

13. **Table 3-2.** DuPont states that storm water runoff flows toward the north, east, and south. DuPont should clarify if storm water is flowing into on-site wetlands or low-lying areas located on the southeastern edge of the facility.
14. **Table 3-8.** DuPont should clarify if sediment was removed from the former neutralization pits prior to filling. DuPont should also describe the source of the soil or fill that was used to cover the ditches.



15. **Figure 3-2.** DuPont should provide a general production history for all manufactured products (such as DuPont's herbicides and insecticides).
16. **Chapter 4, Page 4-3, Paragraph 3.** DuPont states that for the purpose of presentation, frequencies of detection (see Table 4-5) and concentration statistics (see Table 4-6) were compiled for constituents found in groundwater and soil samples; however, the data presented in the text focuses only on constituents detected with a frequency greater than 5 percent. DuPont should present data for all frequencies, because it may be premature to focus on data where the frequency of detection is greater than 5 percent; DuPont's discussion on this issue could eliminate a one-time high inorganic or organic concentration. In addition, DuPont's discussion on percent frequency may be premature; the percent detection evaluation may be more appropriate after the Phase I and II RCRA facility investigations are complete, not before.
17. **Chapter 4, Page 4-4, Paragraph 3.** DuPont states that only 20 percent or greater of the samples tested warrant detailed review of their distribution in facility groundwater and soil. DuPont should provide justification on how the 20 percent value was determined and how many samples fall within this percentile (see Table 4-1).
18. **Chapter 4, Page 4-7, Paragraph 0.** DuPont states that carbon disulfide may be naturally occurring and provides a reference to support this statement; however, the carbon disulfide detected in groundwater may also be related to on-site historical waste management practices. DuPont should provide background carbon disulfide data for soil and groundwater to backup these statements during the Phase I activities.
19. **Tables 4-3 and 4-4.** DuPont should report all analytical values, including those that have less than a 5 percent frequency detection.
20. **Table 4-6, Pages 1 through 3.** DuPont states on Page 4-6, Paragraph 4, that organic



constituents were generally not found, however, the data presented in Table 4-6 indicates that numerous organic compounds were found in groundwater and soil. DuPont should correct this discrepancy.

21. **Table 4-6, Page 3 of 3.** DuPont states that multiple detections at each location were averaged before calculating the mean. DuPont should discuss the data collection regulatory framework that they used to determine the mean.
22. **Chapter 5, Page 5-5, Paragraph 0.** DuPont indicates that the southward flow of groundwater is limited by the East Branch of the Grand Calumet River system, which acts as a hydraulic barrier. DuPont should provide data that supports these statements.
23. **Chapter 5, Page 5-6, Paragraph 4.** DuPont states that "few residents, if any, have direct contact with groundwater within the potentially affected area." However, in the text, DuPont states that groundwater and surface water may be hydraulically connected in this area, because off-site groundwater ranges from about 2 to 7 feet bgs. DuPont's one time sampling event at Riley Park does not provide enough data to support their conclusion that few residents have direct contact with groundwater; therefore, without further data to support this conclusion, it is not clear what groundwater's potential effect is on the Riley Park residents. DuPont should provide additional data on the effect that groundwater may have on Riley Park residents.
24. **Volume 2, Book 1, Appendix--Phase III Groundwater Level Data.** DuPont presents a summary of monitoring well gauging results from 1991 through 1993, however, the survey data for both years appear to be exactly the same. DuPont should review this data.
25. **Volume 2: Book 2, Appendix--Spring (Seep) Quality Data.** DuPont should provide information on the seep and should discuss what steps were taken to eliminate the three seeps that were found on the southern edge of the property in 1990.



26. **Volume 2: Book 2, Appendix --Summary of Raw Materials, Products, and Waste Streams by Manufacturing Process.** DuPont's summary of the manufacturing processes should include the following missing manufactured products (see Specific Comment 12): adhesives; Anisole®; Deenate®; detergents; EPN®; Fenuron®; Ferguson and Triangle packers; ferric sulfate; garden and potato dust; Glattite®; Lorox®; Manganar®; manganese sulfate; Marlate® 50; methoxychlor; plant food; sodium sulfide; Tupersan®; Valron® Estersil and Estersil GT; Velpar®; and zinc oxide products (see Appendix B--Detailed Production History for a cross-reference).
27. **Volume 2, Appendix C.** DuPont should provide process flow sheets for all chemicals produced at the facility (see Specific Comment 26 for the chemical processes that are missing).
28. **Volume 2, Appendix--Riley Park Area Information.** DuPont may have to provide additional information, within the framework of the Phase I RCRA facility investigation, on the amount of groundwater that may be infiltrating into the Riley Park sanitary sewer system.





DRE-9J

Mr. David E. Epps  
Project Manager  
The W-C Diamond Group  
Barley Mill Plaza 27  
P.O. Box 80027  
Wilmington, Delaware 19880-0027

Re: Sediment Characterization  
Work plan Comments  
DuPont-East Chicago, IN  
IND 005 174 254

Dear Mr. Epps:

Pursuant to our discussions at the meeting held in Chicago on December 2, 1997, the United States Environmental Protection Agency (U.S. EPA) is providing for your consideration the following comments on the subject deliverable. These comments incorporate those of U.S. EPA as well as those of the Indiana Department of Environmental Management (IDEM).

As discussed at our meeting, when you have had time to address these comments in writing, we will set up a conference call to discuss them in more detail, if necessary. Then the Work Plan can be revised to incorporate any changes agreed upon, and the submittal of the detailed Quality Assurance Project Plan can take place.

If you have any questions regarding these comments, please feel free to call me at (312) 886-6194.

Sincerely yours,

Allen T. Wojtas, Project Manager  
DuPont - East Chicago, Indiana Facility

Enclosure  
cc: Scott Ireland, IDEM  
Hilton Frey, DuPont



**Technical Review Comments on  
"Sediment Characterization Study Work Plan  
for the DuPont East Chicago Facility"**

**General Comments**

1. There is a reference throughout the document to the "Grand Calumet Industrial Waterway System". This should be changed to its true name, the Grand Calumet River System.

**Specific Comments**

1. **Section 2.1, Page 2-1, Paragraph 2.** The last part of this paragraph discusses the historical and present outfalls from the DuPont facility. However, the number and locations of the historical outfalls are not provided. The number and locations of the historical outfalls should be considered during the placement of the transects in the SCS. The text should discuss the length of service for each outfall, the designated uses of each outfall and the types of chemicals discharged through each outfall. In addition, a figure showing the location of the historical and present outfalls should be included in the SCS Work plan.

Also, the last sentence of this paragraph states that there is only one permitted wastewater discharge from the DuPont facility; however, Figure 2-3 shows three outfalls as of 1986. It is unclear which of the three outfalls is the permitted wastewater discharge currently in use, and if that outfall is also currently used for stormwater discharges from the site.

2. **Section 2.3.1, Page 2-4, Paragraph 4.** The second bullet of this paragraph discusses and compares the results of two sediment studies relevant to the East Branch. This discussion is helpful for evaluating the preliminary COI list; however, the SCS Work plan should include data comparison tables, and the sampling locations and depths used for the studies should be specified.

3. **Section 2.3.2, Page 2-5, Paragraph 1.** The second bullet of this paragraph states that during surface water sampling in the East Branch by the U.S. Geological Survey (USGS), concentrations of most measured parameters were found to decrease or remain unchanged from upstream to downstream of the DuPont facility. It is unclear what parameters the USGS measured during the surface water sampling. A brief list of parameters measured and the concentrations detected by the USGS should be provided in the SCS Work plan.



4. Figure 2-3, Page 2-6. This figure contains several incorrect references, which should be changed. For example, the location of the East Chicago POTW and the East Chicago main combined sewer overflow (CSO) are at the same location on the north side of the river, just east of Indianapolis Boulevard in East Chicago, Indiana. Hammond's main CSO is just east of Columbia Avenue, on the north side of the river, yet it is not on the map; Hammond only has two CSOs west of Columbia Avenue, yet four are shown. In addition, several name changes should be referenced, such as J&L Steel now being LTV Steel, and Vulcan Materials currently being AMG Resources.

5. Section 3.1, Page 3-3, Paragraph 1. This paragraph states that organic compounds, such as polycyclic aromatic hydrocarbons (PAH), are readily metabolized by fish and do not accumulate in their tissues. This statement is generally true; however, PAH accumulation in fish is dependent on PAH concentration, water pH, and water temperature. In addition, PAHs are not the only compounds present in the water and sediment of the East Branch; therefore, the overall effects of inorganic and organic bioaccumulation are not easily identifiable. This paragraph should discuss the effects of COI concentration, water pH, and water temperature on bioaccumulation. In addition, this paragraph should reference an appropriate source for the information about PAH accumulation in fish.

6. Section 3.2, Page 3-6, Paragraph 2. This paragraph states that a 1984 USGS study determined that U.S. Steel-Gary Works and the Gary Sanitary District were the source of most of the chemicals detected in the East Branch. However, it is unclear what chemicals were detected and exactly what media were investigated. A summary of the chemicals detected and the media investigated should be provided in this paragraph.

7. Section 3.2, Page 3-6, Paragraph 3. This paragraph indicates that the upper 10 centimeters of sediment is the horizon of greatest interest because it represents the biologically active zone. Please provide some reference(s) to support this statement.

8. Section 3.2, Page 3-6, Paragraph 3. The first bullet of this paragraph lists the COI loadings from the DuPont facility. The permitted outfall is included in the list; however, historical outfalls are omitted. The list of COI loadings should include historical outfalls from the DuPont facility. The Description of Current Conditions Report (DCCR) has information that will be helpful for determining historical source loading to the East Branch.



9. Figure 3-1, Page 3-7. Figure 3-1 states that there are 12 CSOs in Gary to the Grand Calumet River. This should be verified with the NPDES permit. Figure 2-3 shows eight CSOs; so this inconsistency should be resolved. In addition, the figure shows 60 mgd as the flow from Gary; this is the design average flow, not the actual flow.

10. Figure 3-2, Page 3-8. Figure 3-2 refers to CSOs and storm drains as unpermitted nonpoint sources. This is inaccurate, as at least all CSOs are permitted to operate under conditions specified in the NPDES permits, and would be considered point sources. Please correct the figure to reflect this change.

11. Table 4-1, Page 4-2. Please explain why the source of information for municipal sewage treatment plants would be the U.S. Army Corps of Engineers rather than the municipalities themselves or IDEM.

12. Section 4.3, Page 4-5, Paragraph 1. Provide some additional information regarding the sediment transport modeling being conducted by the Corps. For example, has it been or when will it be completed? If completed, what were the results?

13. Section 5.3.1, Page 5-2, Paragraph 3. The text indicates that the COIs are based on, to some degree, the chemicals related to manufacturing processes at the DuPont facility. Please provide a comprehensive list (or table) of chemicals historically used or stored at the facility. This list will assist in the evaluation of COIs.

14. Section 5.3.1, Page 5-2, Paragraph 3. The text also states that the COIs are based on previous data on sediment quality. Please define and incorporate a summary of such relevant data.

15. Section 5.3.1, Page 5-2, Paragraph 5. This paragraph discusses the sampling transect locations. The rationale for the transect locations is not self-evident, and therefore the discussion should be expanded. In addition the following recommendations are made:

a. Transect A should be moved downstream of Cline Avenue, so as not to duplicate work proposed by the Gary Sanitary District.

b. Transects B and C may need an additional transect between them, as ground water flow from DuPont may impact that reach, based on past historical storm water disposal practices at the facility.

c. Additional transects are needed downstream of Kennedy Avenue but upstream of the USS Lead outfall canal, to ascertain the





degree of contamination in that reach (propose at least 2).

d. A map showing the transects in relation to all historical outfalls and ground water monitoring wells would be useful in making a judgement as to their locations.

16. **Table 5-1, Pages 5-3 and 5-4.** The following comments are related to Table 5-1:

a. Table 5-1 references the TAL metals target list, without actually clearly specifying what the target metals are. Two sets of metals are listed: As, Cd, Cu, Hg, Ni, Pb, Sb, and Zn; and also Mg, Mo, Ni, Ag, and V. This needs to be clarified and justification should be provided.

b. An explanation should be provided as to the use of the AVS-SEM data.

c. Organochlorine pesticides are listed as COIs, but dioxins and furans are not. This should be explained since previous data collected by U.S. Steel indicated high levels of dioxins/furans in the vicinity of the DuPont facility.

d. COD is incorrectly listed as an indicator of sewage discharges from the Gary Sanitary District or CSOs.

e. Dissolved oxygen is an indicator of surface water's ability to support balanced aquatic life; low dissolved oxygen may be an indicator of current sewage discharges, or a high benthic oxygen demand.

17. **Table 5-1, Pages 5-3 and 5-4.** It is not clear how the list of preliminary COIs was developed. The list of preliminary COIs should be supported by a list of chemicals historically used or stored at the DuPont facility. Also, examination of the Description of Current Conditions Report (DCCR) for the DuPont facility indicates that semivolatile organic compounds, aluminum, silver, organophosphorus pesticides, and organocarbamate pesticides should be considered for inclusion on the preliminary list of COIs because of historical use and their detection in media at the DuPont facility. The SCS Work plan should include these constituents in the preliminary COI list or provide justification for their exclusion.

18. **Figure 5-1, Page 5-5.** This figure shows the proposed transect and sediment sampling locations on the East Branch. However, it is not clear whether consideration was given to adjusting the proposed sediment sampling locations to accommodate for the various sediment deposition conditions that exist in the East Branch. The figure should include indicators of relative deposition in the East Branch. In addition, the sediment sampling program shown in this figure and discussed in Section 5.3.1 indicates that samples will be collected from the upper 30 centimeters of sediment and deep sediment. However, the sampling



program does not account for sediment that is below near surface sediment (defined as 10 to 30 centimeters deep) and above deep sediment. Provide justification for not sampling this sediment.

19. Section 5.3.1, Page 5-6, Paragraph 1. This paragraph indicates that wetlands only in the vicinity of the DuPont chrome outfall are to be evaluated. This is inconsistent with the intent of the Order, since historical seeps of ground water from the DuPont property were known to exist and have likely contaminated the wetlands upstream of the chrome outfall.

20. Section 5.3.1, Page 5-6, Paragraph 1. Selected locations for wetland samples are not shown on Figure 5-2. It is suggested that at least three wetland samples be collected in the DuPont wetlands, to be located based on a review of the Phase I and II studies. Also, Table 5-2 identifies six wetland samples, yet the text indicates five. Table B-2 apparently clarifies this with the sixth being a blank. It is recommended that at least seven samples be taken, plus a blank. The samples at Harbison Walker and USS Lead should be an extension of the River transects, if possible, as discussed when the Order was negotiated.

21. Section 5.3.2.1, Page 5-8, Paragraph 3. The text in the second paragraph suggests 25 surface sediment samples. This is inconsistent with Table 5-2, which identifies 20 surface sediment samples taken from 9 transects (no surface sediment sample at transect H). Please revise either the table or text to ensure consistency.

22. Section 5.3.2.1, Page 5-8, Paragraph 3. The text of this paragraph also suggests that 10 of the surface sediment samples will be analyzed for the full analyte list. Table 5-2 identifies only 8. Please revise either the table or the text to ensure consistency.

23. Section 5.3.2.2, Page 5-8. This section describes that some sediment analysis will consist of discrete sediment sampling in 10 centimeter increments. This will be very difficult if not impossible in this system. A contingency plan should be developed in case this sampling is not possible. Also, a pilot study should be conducted prior to sampling to see if this type of sampling is a viable option.

24. Section 5.3.2.2, Page 5-8, Paragraph 5, and Table 5-2, Page 5-9. This paragraph and table present the sampling locations for the near-surface sediment. It is unclear why no collection of near-surface sediment samples is planned for transects D through



G and J, which are in the area potentially impacted by the DuPont facility. If near-surface samples are not planned for these transects, please provide justification for their exclusion.

25. Section 5.3.2.3, Page 5-11, Paragraph 2. Please provide additional detail regarding the criteria to be used to determine whether 2 or 3 samples will be taken from each core, and how the horizons for compositing will be determined.

26. Section 5.3.2.3, Page 5-11, Paragraph 2. This section states that these samples will be analyzed for TAL metals, oil and grease, soluble flouride, phenolics, pH, TOC, total solids, grain size, total cyanide, total sulfide, soluble sulfate, ammonia, total Kjeldahl nitrogen, and total phosphorus (Table 5-2). Table 5-2 indicates these sediments (as well as near-surface sediments) will be analyzed for the short analyte list. This list differs from the text outlined in this chapter. The analysis outlined in the chart includes AVS-SEM (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) and AVS along with the analysis outlined in this chapter. The sediment should be analyzed according to the parameters in Table 5-2.

27. Section 5.3.2.3, Page 5-11, Paragraph 2. This paragraph indicates that the short analyte list will be utilized for all deep sediment core samples. A percentage of the deep core samples should be analyzed using the long list (short list plus BTEX, PAH compounds, phenols, and chlorinated pesticides/PCBs). The deep sediment core locations that should be analyzed with the long list should include (but not limited to) transects B, G, and I.

28. Section 5.3.2.4, Page 5-11, Paragraph 3. This paragraph proposes one of the wetland samples be taken in the vicinity of the former chrome outfall. From the DCCR, DuPont records indicate that dredging may have taken place in this area during the 1970s. Therefore, this sampling location may have been dredged or received dredge material. Past dredging activities and deposition of dredge material should be investigated before wetland sampling locations are identified.

29. Section 5.3.2.4, Page 5-11, Paragraph 4. The text in this paragraph suggests that the short analyte list be used for the wetland samples, but Table 5-2 suggests the full analyte list. Please resolve this discrepancy.

30. Section 5.3.3, Page 5-11 and 5-12, Paragraph 5. DuPont's contribution to water quality cannot be assessed with only one sampling station located upstream of the DuPont property. Please



provide rationale for only one sampling location upstream of the DuPont property. Also, on page 5-12, the last sentence of the top paragraph states that a surface water sample from each location will be analyzed .... This is inconsistent with earlier text and suggests more than one location.

31. Section 5.3.3, Page 5-12, Paragraph 1. This paragraph discusses the analyte list for surface water samples. Because the DCCR states that total and dissolved aluminum and manganese have been detected in samples collected from on-site groundwater monitoring wells, these preliminary COIs should be considered to be added to the analyte list for the surface water samples.

32. Section 5.3.4, Page 5-12, Paragraph 4. This paragraph states that National Pollutant Discharge Elimination System (NPDES) permits will be reviewed to identify existing permitted outfalls and identify historical outfalls that may have been abandoned. However, some abandoned historical outfalls may not have been identified through the NPDES permitting process. Therefore, the investigation to locate historical outfalls should not only rely on the review of NPDES permits. The SCS Work plan should consider all regional and facility-specific information to determine the location of abandoned historical outfalls.

33. Appendix A, Section 5.2, Page A-7. Please correct this paragraph to reflect Mr. Epps' position with W-C Diamond Group, and his relationship with DuPont Company.

34. Appendix B, Section 1, Page B-1, Paragraph 2. The number of samples in this Appendix need to be consistent with the text and tables in the body of the Work plan. Please ensure consistency throughout the document.

35. Appendix B, Table B-3, Page B-9. Distilled water should be replace by distilled/deionized water during decontamination to minimize metals contamination of the samples. This is mentioned in the SOP 2. Please revise this table to be consistent with SOP 2.

36. Appendix B, Page B-10, Paragraph 4. Please reference and include the new methanol preservation requirement for volatile organic compound analysis in soil/sediment samples. It is required after December 31, 1997, by SW-846. A copy of the Regional policy is included for your reference.

37. Appendix B, Page B-10, Paragraph 5. This paragraph states that sufficient head-space will be left in containers that are to





be frozen (i.e., archive samples) to accommodate expansion during freezing. Due to conflicting opinions regarding sediment integrity after freezing, samples should only be frozen that are to be archived. Samples that are to be immediately analyzed should not be allowed to freeze.

38. Appendix B, Page B-10, Paragraph 6. This paragraph explains that a geologist will describe and photograph the samples after all have been collected for analysis. This should be done prior to the samples being collected and composited, so as to actually record the appearance of an undisturbed sample.

39. Appendix B, Page B-11, Last Paragraph. Once again, see comment #38.

40. Appendix B, Page B-12, Last Paragraph. Once again, see comment #38.

41. Attachment B1, SOP 2, Page 2-8. This section lists spray paint as one of the items needed for the "Equipment Required to Decontaminate Organically Contaminated Soil Sampling Equipment". No reason is given for this item. This piece of equipment should be eliminated since it can introduce organic contamination to the samples.

42. Attachment B1, SOP 5, Page 5-2. Since no groundwater sampling is proposed during the SCS, the section on groundwater sampling should be removed from this SOP.

43. Attachment B1, SOP 5, Page 5-3. This section states that trip blanks will be prepared in the field office by pouring deionized water into two 40-mL VOC vials and tightly closing the lids. The trip blanks should be prepared before the bottles arrive on site.





DuPont Specialty Chemicals

October, 28, 1997

U.S. EPA, Region 5  
Waste Pesticide and Toxics Division  
Enforcement and Compliance Assurance Branch  
77 West Jackson Boulevard, DRE-8J  
Chicago, IL 60604-3590

Attn: DuPont-East Chicago Project Coordinator

RE: **Current Conditions Report**

Dear Mr. Wojtas::

Pursuant to RCRA Corrective Action Order IND 005 174 254, DuPont is enclosing three (3) copies of the Current Conditions Report and associated appendices for your review. Additional copies of the reports have been submitted to Kurt Whitman (TetraTech EM, Inc.) and the Indiana Department of Environmental Management (IDEM). We look forward to discussing the Current Conditions Report with EPA and IDEM in several weeks.

If you have any questions please feel free to call David Epps at (302) 992-6592.

Sincerely,



J. Hilton Frey  
Project Director

c: Chris Myer, IDEM (4 copies, 2 sets of appendices)  
Kurt Whitman, TetraTech EM, Inc. (1 copy, 1 set of appendices)  
Bernie Reilly, DuPont (1 copy w/o appendices)  
Kathy Shelton, DuPont (1 copy w/o appendices)  
File

Enclosures (3)





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

DRE-9J

OCT 24 1997

Mr. Dave Epps  
Project Manager  
DuPont Company  
Barley Mill Plaza, Building 27  
P.O. Box 80027  
Wilmington, Delaware 19889-0027

Re: Description of Current  
Conditions Report  
DuPont-East Chicago  
IND 005 174 354

Dear Mr. Epps:

This letter is to confirm a conversation of October 22, 1997, during which I had agreed to a one week extension for the submittal of the Description of Current Conditions Report (DCCR). This Report is a requirement of the Administrative Order (5-RCRA-97-007), effective June 25, 1997.

The submittal should be post marked no later than October 30, 1997. Please be advised that this extension does not effect the deadline for other deliverables required by the Order.

If you have any questions regarding this matter, please call me at (312)886-6194.

Sincerely your,

A handwritten signature in cursive script, reading "Allen T. Wojtas", is written over the typed name.

Allen T. Wojtas  
Enforcement and Compliance Assurance Branch



USEPA / IDEM / IDNR / DuPont MTG

9/25/97

<u>NAME</u>	<u>REPRESENTING</u>	<u>PHONE</u>
MIKE MIKULKA	A.S. EMT WPTD	312-PM-6760
Allen Wojtas	USEPA WPTD	312-886-6194
JOHN DORKIN	USEPA Water	312-886-1980
Wayne C Faatz	IDNR	317-232-4080
Kay Nelson	IDEM/NWTO	(219)881-6712/6745
Scott Ireland	IDEM / owm - Sediment Coordinator	(317) 233-1432
Sally Swanson	USEPA - NWIN Team Manager	312 353 8512
Beth Admus	IDEM / NWIN COORD.	317-233-5517
SCOTT STORMS	IDEM / OLC	317-232-8595
David Epps	DuPont	302-992-6592
HILTON Frey	DuPont	704-362-6628
Lucinda Jacobs	PTI Env. Services	425/643-9803
CHRIS LMYER	IDEM / CAS	317/233-4625





**From:** "Schuessler, Ed" <SCHUESE@ttemi.com>  
**To:** 'Bernie Orenstein' <orenstein.bernie@epamail.epa.g...  
**Date:** 9/19/97 3:07pm  
**Subject:** R05061 Dupont

Bernie: I spoke with Allen Wojtas today concerning our cost estimate.  
He is OK with the difference in cost based on the following:

Task 2: Tetra Tech based its estimate on the full amount of field oversight and associated reporting. EPA based their estimate on about half the stated oversight. 3 }

Task 3: Tetra Tech based its cost estimate on the review of the Description of Current Conditions (DOCC) Report and file review. EPA based their cost estimate on the review of the DOCC because the amount of file review was not known at the time the WA was written. The amount of file review became apparent latter and was relayed to Tetra Tech verbally.

Task 8: Tetra Tech based its cost on the community relation support and support to EPA in developing the statement of basis (SB) and supporting EPA in compiling decision and response to comments (RTC) documents. The SB and RTC support is typically done as part of the Community Relation support task. EPA based its estimate with out cost for the SB and RTC support.

*sent to Brian  
& Allen 9/22  
due 9/26*





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

A handwritten signature, likely of Allen Wojtas, is written in dark ink over the address information.

REPLY TO THE ATTENTION OF:

DRE-8J

MAY 07 1997

Stephen C. Ehrlich, P.E.  
Project Manager  
DuPont Environmental Remediation Services  
Barley Mill Plaza 27  
P.O. Box 80027  
Wilmington, DE 19880-0027

Re: Corrective Action Order  
DuPont, East Chicago, IN  
IND 005 174 354

Dear Mr. Ehrlich:

Enclosed please find two signature-ready originals of the revised corrective action order for the subject facility. U.S. EPA has incorporated the revisions to the March 14, 1997, draft of the corrective action order as discussed during our April 29, 1997 conference call.

If you find the corrective action order acceptable, please have the appropriate representative of DuPont Company execute both originals and return both originals within three weeks of your receipt of this letter to:

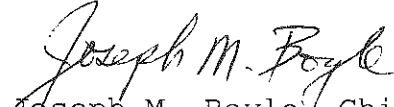
Allen Wojtas  
United States Environmental Protection Agency  
77 West Jackson Blvd. (DRE-8J)  
Chicago, IL 60604

As you are aware, the corrective action order remains subject to review and approval by U.S. EPA, and does not become effective until it is signed by the Chief of the Enforcement and Compliance Assurance Branch of the Waste, Pesticides and Toxics Division. After U.S. EPA executes both originals, an executed original will be sent to you.



If you have any questions, please contact Mary McAuliffe at 312-886-6237, Allen Wojtas at 886-6194 or Michael Mikulka at 886-6760.

Sincerely yours,

A handwritten signature in cursive script that reads "Joseph M. Boyle".

Joseph M. Boyle, Chief  
Enforcement and Compliance Assurance Branch

Enclosure

cc: Mary Fulghum, IDEM, NWRO  
Matt Klein, IDEM, w/enclosure  
Scott Storms, IDEM, OLC  
Bernie Reilly, DuPont  
Bill Lawrence, DuPont



If you have any questions, please contact Mary McAuliffe at 312-886-6237, Allen Wojtas at 886-6194 or Michael Mikulka at 886-6760.

Sincerely yours,

Joseph M. Boyle, Chief  
Enforcement and Compliance Assurance Branch

Enclosure

cc: Mary Fulghum, IDEM, NWRO  
Matt Klein, IDEM, w/enclosure  
Scott Storms, IDEM, OLC  
Bernie Reilly, DuPont  
Bill Lawrence, DuPont

bcc: Mary McAuliffe, EPA - ORC  
Allen Wojtas, EPA - WPTD  
Mike Mikulka, EPA - WPTD  
Branch File  
Section File

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
				AP 5-7-97	
AUTHOR/ TYPIST	MINN/ <del>OHIO</del> SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
Attw 5/5/97				Joseph 5/5/97 M. Boyle	

Mom ORC  
5/6/97

DAW, ORC  
5/6/97







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

March 14, 1997

REPLY TO THE ATTENTION OF:

DRE-8J

Stephen C. Ehrlich, P.E.  
Project Manager  
DuPont Environmental Remediation Services  
Barley Mill Plaza 27  
P.O. Box 80027  
Wilmington, DE 19880-0027

Re: Revised Corrective Action Order  
DuPont, East Chicago, IN

Dear Mr. Ehrlich:

Enclosed is a revised corrective action order for the subject facility, which has been revised to reflect agreements previously reached on January 6 and February 11, 1997. In addition, most of the changes you proposed in your letter and attachments dated February 27, 1997, have also been incorporated, including changes with respect to aquatic quality criteria. Changes proposed previously which were agreed upon are within the text. New additions are underlined, and new deletions are bracketed.

Highlighted changes include the following:

Deletion of the definition for Corrective Measures Implementation, and addition of a definition for Waste Management Unit;

Additional comments throughout from the Indiana Department of Environmental Management (IDEM), mainly to improve clarity;

Incorporation of language at Section VIII to reflect that corrective action will encompass any releases from on-site storage of the flue dust and refractory brick (D007), and the on-site landfill; and

Revised maps for Attachment VII and Figure 1 to Attachment I.

As discussed on March 14, 1997, Attachments I and II have been cross-referenced to reflect their linkage, and the schedules in both have been revised to reflect our discussions. We will be in

contact with you shortly to discuss the revised order and negotiate any final changes prior to signature. In the meantime, please contact Mary McAuliffe at 312-886-6237, Allen Wojtas at 886-6194 or me at 886-6760, if questions arise.

Sincerely,



Michael J. Mikulka  
Senior Environmental Engineer  
Enforcement and Compliance Assurance Branch

cc: Mary Fulghum, IDEM, NWRO  
Matt Klein, IDEM, OE  
Scott Storms, IDEM, OLC  
Bernie Reilly, DuPont  
Bill Lawrence, DuPont  
Mary McAuliffe, EPA - ORC  
✓ Allen Wojtas, EPA - WPTD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

DATE: March 10, 1997

SUBJECT: DuPont's comments on cited water quality criteria

FROM: Bill Tong, Environmental Scientist  
Water ECA Branch, Section 2 (WC-15J)

THROUGH: Jim Filippini, Chief  
Water ECA Branch, Section 2 (WC-15J)

TO: Mike Mikulka  
RCRA Enforcement Branch (DEP-8J)

I have reviewed the comments provided by the DuPont company regarding the proposed RCRA Corrective Action Order, with respect to the East Chicago Plant and specifically, the water quality criteria cited therein. My comments are displayed below in boldface.

General Comments provided by DuPont:

1. The document should state that all ambient water quality criteria (AWQC) cited for protection of aquatic life are for total concentrations, not dissolved. In 1995, EPA developed specific criteria for dissolved concentrations (Federal Register Vol. 60, No. 86, pp. 22229 - 22237.) Dissolved criteria are generally considered more appropriate for evaluating potential impacts.

**This comment is acceptable, and should be noted in the revision.**

2. The language used to cite toxic concentrations for freshwater aquatic life should be modified to reflect the actual basis of AWQC. For example, the following sentence for nickel: *"Available data for nickel indicate that acute and chronic toxicity to freshwater life occur at concentrations as low as 1,400 µg/l and 160 µg/l, respectively..."* should be modified to state *"EPA has developed acute and chronic AWQC for the protection of aquatic life at 1,400 µg/l and 160 µg/l, respectively."*

**This comment is acceptable, and should be noted in the revision.**

3. The current maximum contaminant level (MCL) for antimony is 6 µg/l, not 10 µg/l.

**Based upon the January 1996 EPA water quality standards chart for SDWA, this comment is correct, and should be revised accordingly.**

4. EPA should cite its most recent guidance. For example, according to EPA 1995, the arsenic AWQC for protection of human health based on ingestion of water plus organisms is 0.015 µg/l and for ingestion of aquatic organisms exclusive of water is 0.14 µg/l. These values are higher than the values of 0.0022 µg/l and 0.0175, respectively.

**The human health AWQC level for arsenic based on ingestion of water plus organisms (fish) should be 0.018 µg/l, not 0.015. The current AWQC level based on ingestion of aquatic organisms (fish) is correctly cited as 0.14 µg/l.**



5. For chromium (VI), EPA incorrectly cites chromium (III) AWQC developed for the protection of human health.

Based on 1993 EPA guidance, the AWQC levels should read as follows:

Chromium (VI)

Acute toxicity AWQC: 16 µg/l  
chronic toxicity AWQC: 11 µg/l

Chromium (III)

Acute toxicity AWQC: 1,700 µg/l  
Chronic toxicity AWQC: 210 µg/l

6. According to EPA (1992, FR Vol 57, No. 246), the freshwater aquatic life AWQC for copper should be 18 µg/l and 12 µg/l, for acute and chronic exposures, respectively, based on total concentrations at a hardness of 100 mg/l.

Based on the 1993 EPA guidance, the AWQC levels cited above by DuPont are correct; the revision should reflect the above.

7. EPA should include the drinking water action level of 1,300 µg/l for copper.

I could not find a reference to verify the above level. I will consult with staff in the SDWA Branch.

8. The acute freshwater aquatic life AWQC for lead should be 82 µg/l at 100 mg/l hardness, not 8.3 µg/l.

Based on the 1993 EPA guidance, the AWQC levels cited above by DuPont are correct; the revision should reflect the above.

9. DuPont was not able to identify the basis of the lead AWQC developed for the protection of human health for ingestion of water plus aquatic organisms or for ingestion of aquatic organisms exclusive of water.

Staff in the EPA Water Standards program may be able to provide an answer to this comment.

10. EPA should state that the AWQC cited for zinc is based on acute exposures and is hardness dependent. In addition, EPA has developed a chronic zinc AWQC for the protection of aquatic life (110 µg/l, at 100 mg/l hardness, total concentration).

Based on the 1993 EPA guidance, the AWQC levels cited above by DuPont are correct; the revision should reflect the above.

cc: Mary McAuliffe, ORC  
Allen Wojtas, DEP-8J



**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**GRAND CALUMET RIVER/INDIANA HARBOR SHIP CANAL FIELD WORK  
COORDINATION MEETING**

**10:00 AM - 1:00 PM CST, FEBRUARY 6TH, 1997**

- I. INTRODUCTION/RATIONALE FOR MEETING**
- II. OVERVIEW OF PROJECTS/NECESSITY TO COORDINATE**
- III. FACILITATED DISCUSSION OF PROJECTS WITH RESPECT TO TIME  
FRAME AND LOCATION**
- IV. PUBLIC PERCEPTION OF A CLEAN RIVER**





# Grand Calumet River/Indiana Harbor Ship Canal 1997 Field Work Coordination Meeting

February 6, 1997  
IDEM NWRO

Scott Ireland- IDEM Contaminated Sediments Remediation Coordinator  
phone- (317) 233-1432 fax- (317) 232-8406 e-mail-SIREL@opn.dem.state.in.us

Please sign in. Copies of this sign-in sheet will be distributed at the close of the meeting.

<u>Name</u>	<u>Organization</u>	<u>Phone/Fax/Email</u>
1. DORSEEN CAREY	GRAND CAL TASK FORCE	219/473-4246 473-4288
2. PAUL LABUS	THE NATURE CONSERVANCY	473-4312 PHONE & FAX
3. Gene Rhodes	Purdue University	A (317) 494-3601 / FX (317) 496-21
4. WENDY MALAMUT	DESIGN WORKSHOP	(605) 890-1815 / 505-890-1817 FAX
5. Mike Ungar	Hammond Sanitary District	
6. ALLEN WOJTAS	USEPA-RCRA	(312) 886-6194
7. Dan Banastek	for Inland steel	312.939.1000
8. Mike Mikulka	USEPA	312-886-6760
9. Jody Harney	IDEM	317-233-1430
10. IAN EWUSI-WILSON	IDEM/OER	(317) 308-3139
11. Wayne C. FAATZ	IDNRI ELU	317-232-4080
12. Jim Smith	IDEM/OER	317-308-3003 (FAX) 3063
13. MORA H. WHEELER	IDEM/OER	(317) 308-3094
14. LORI K. SLOAN FOR DONALD SMALES	GARY SANITARY DISTRICT	(219) 944-0595
15. Glenn TOPPING	U.S. Steel - GARY WORKS	219-888-4500
16. RICK MENOZZI	U.S. Steel - PITTSBURGH	412.433.6191
17. Scott Chafin	ENTACT - Chicago	773 281-2455
18. Tony Biasi	Entact - Chicago	(219) 397-8577
19. STEPHEN EHRLICH	DUPONT	302-992-6575 / FAX 302-992-151
20. Beth Admire	IDEM	(317) 233-5946

Grand Calumet River/Indiana Harbor Ship Canal  
1997 Field Work Coordination Meeting

February 6, 1997  
IDEM NWRO

- 21 Mary Fulghum IDEM/NWRO 219 881-6708 6745 fx  
MFULG@UPN.DEM.STATE.IN.US
22. KAY NELSON IDEM NWRO Director 219-881-6712  
fx 6745
- 23 Howard Duckman ~~IDEM~~ USEPA Engineer (312) 886 6716  
Region V
- 24 Tom Anderson 219/879-3937  
Save the Dunes Council  
Save the Dunes Conservation Fund
25. Michael Stewart BRD/USGS Ecologist (219) 426-8336 (4)  
FAX 929-5792

①

2/6/97

## Grand Cal Fieldwork Coord. Meeting

- Discuss projects on River
- Data store

> Scott Deland to Coordinate activities in River. SCRAP

> IDEN > USACE, in River this summer gather data

→ Reach in Reach analysis of River / to delist impairments (14)  
- Restoration Options on River

\* Lagoons > sediment, macroin. fish, toxicology & water quality  
cultural resources Funding from Parks National Parks

- Sustainable Development Program > Oct 97

→ Prelim Report > Part of Army Corps / need to finalize draft.

\* Gene Rhodes > Prof. Purdue U.

- billboard affect projects > sensitive to  
cancer in area

- Genetic Bio Issues

- Start this summer

- Workshop plan for lagoons



> Dick Newze, USS Steel / Sediment remediation  
project 5 miles

1990 CWA Consent Order

- Order to be signed 1Q this year
- Additional Studies in river / soft sediments  
700 yd<sup>2</sup>
- Several years away from dredging / Full of silt
- Steve E. / DuPont  $\rightarrow$  Characterization of the Sediments  
& why wetlands
- Paul Labas  $\rightarrow$  work w/ NIPSCO, discussions w/ DuPont  
on Wetlands
- Dam B. for Island Steel  
  - $\rightarrow$  1993 Consent Agreement
  - Charact in Donora Marsh
  - Chem / Macro inv.
  - possible in March
- USS Steel / Contact
  - > Remediation Proj.
  - > Field Id. Charact upper 1/2 mile  
of the river
  - > 4 Removal Action



> Grey Sand Ditch Harold Dackman

□ 6 transects from outfall to Clive Ave  
2 soft side samples

↳ Character of sed. stable this  
Summer.

- Sampling parameters same as  
US Steel

- A City of East Ave >

- Inland > S corner of turning Basin  
Issue for COE project

> May have high benzene levels TC Hg  
> Full sampling

Inland > Slag vegetation project 30-40 acres

> R. McCollors, IDEM / Spills etc on the Grand  
219 821 6707 Calumet River

- Point of Contact for COE Work > Scott Ireland





# Beth Assessment Plans

↳ IDEM IDNR, DOI Fish Trusts

6/96 PIR - Emerald Stream  
↳ Budget to develop plan?

> RAP drafting stage 2 / Area of Concern

> Public Perception of Clean River

↳ Signs along River?  
- Do not swim or fish  
Contain Sediments

> Wayne Teatz, DNR / State board of Health decision

> Jim Smith, DNR / Individual Fish Consumption Advisories

DOH issues  
↳ Committee / Advisories

Marquette Lagoons > Level  
2-3 Advisories to / lower

Level 5 Advisories in GCH

↳ Do not eat any fish at  
anytime



> Scott Contact person

> Summary >



## **Toll Road Stormwater Runoff Demonstration Project**

**Purpose:** A project to Design and Construct a demonstration stormwater detention pond to control nonpoint source pollution impact from the Indiana Toll Road Buchanan Street Interchange.

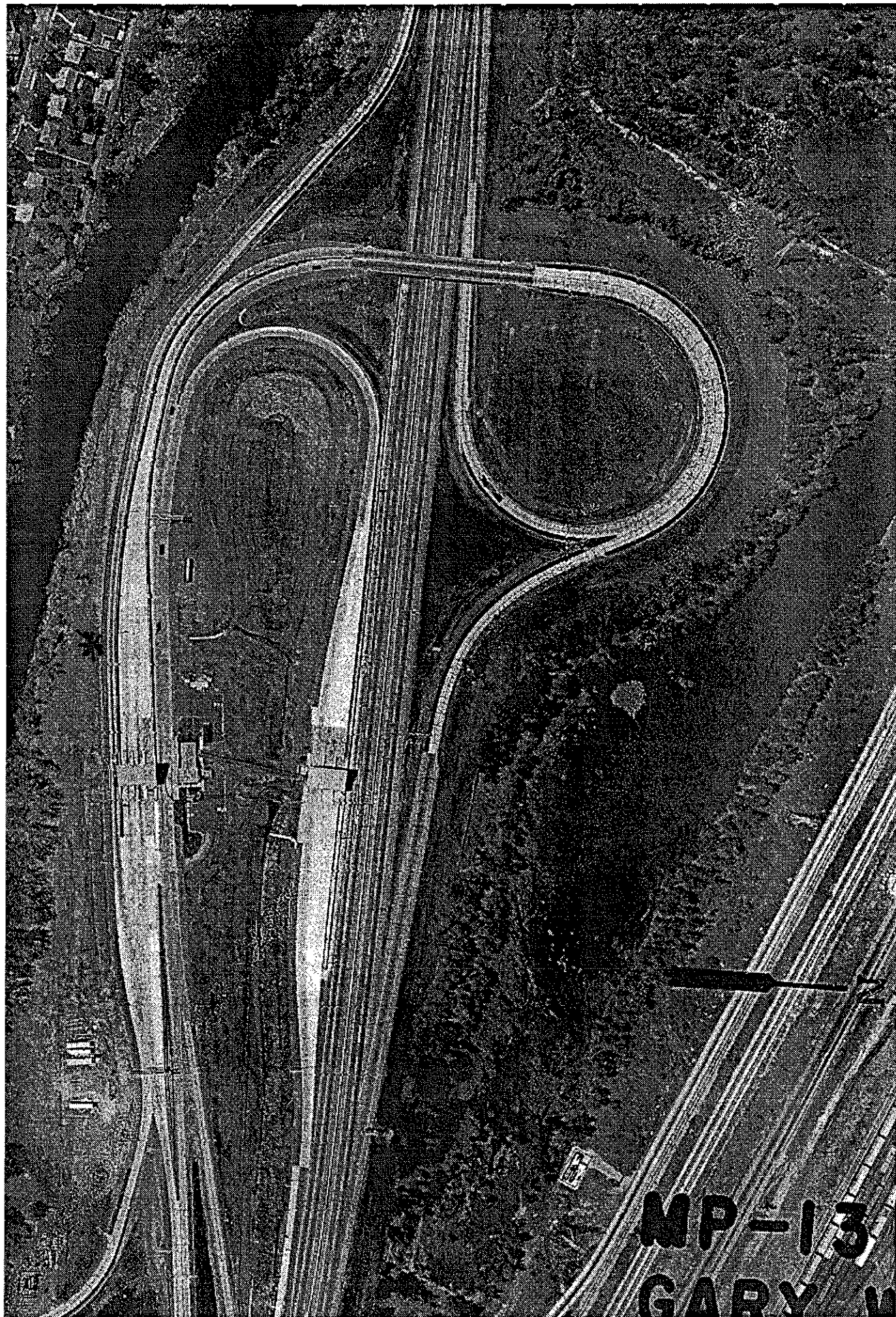
**Participants:** Indiana Department of Environmental Management, Purdue University, Environmental Engineering, INDOT Toll Road Division.

**Field Work Component:** Purdue University will collect runoff samples at the outfall of a stormwater pipe at the Toll Road Buchanan Street Interchange.

**Location and Schedule of Sampling:** The pipe to be sampled discharges on the north of the Grand Calumet River approximately 15 feet from the river's edge, approximately 1000 feet downstream from USX outfall 33. Initial samples to be collected in Spring of 1997. Further sampling in the same location will be undertaken after construction of the demonstration project to evaluate its effectiveness.

**Construction Project:** Data gathered by Purdue will be used by them to create an optimum design for a stormwater treatment pond. The designs will be given to the Toll Road Division, which will let contracts to construct the pond in Late Summer, early fall of 1997. The construction will include erosion control measures to minimize negative impacts on the Grand Calumet River, however, the project may cause small temporary increases in sediment loading from the site.

**IDEM Contact:** Kathy Baird, Toll Road Project Coordinator, (219) 881-6730.



NP-13  
GARY W

**From:** Matthew Klein <mtkle@opn.dem.state.in.us >  
**To:** R5WST.R5RCRA(mikulka-michael)  
**Date:** 11/26/96 2:13pm  
**Subject:** DuPont

**DuPont**

I spoke with Laura Steadham from the Solid Waste Facilities Branch today. She indicated that their Branch would like to incorporate two (2) solid waste issues into the RCRA corrective action order.

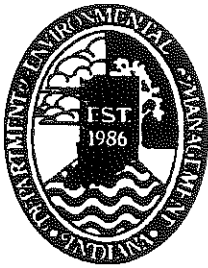
First, there exists an old closed landfill covered with grass at the facility. It is unclear as to what wastes are contained within this landfill. Also, it is not clear whether this landfill is also an area of concern already under the corrective action order. Mike should probably call Laura (317-232-8866).

The second issue is the current Type III restricted waste landfill. IDEM would like to seek closure and be the lead party in reviewing such closure activities.

I need to know from Mike at what time he would like IDEM to join in on the conference call to discuss the HW agreed order and solid waste issues (preferably first thing in the







# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live*

*Evan Bayh*  
*Governor*

*Michael O'Connor*  
*Commissioner*

100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
Telephone 317-232-8603  
Environmental Helpline 1-800-451-6027

VIA CERTIFIED MAIL Z 339 936 343

October 16, 1996

Ms. Stacy M. Dedinas, Section Engineer  
Dupont Specialty Chemicals  
East Chicago Plant  
5215 Kennedy Avenue  
East Chicago, IN 46312

Dear Ms. Dedinas:

Re: Supplemental Information  
Dupont Inc. On-Site Disposal Facility  
Sampling Analysis Plan/Waste Reclassification Request  
Lake County

Staff have completed review of the Sampling and Analysis Plan (SAP), received by the Indiana Department of Environmental Management (IDEM) on September 23, 1996, for the Dupont Inc. Restricted Waste Site, located in Lake County.

Based on the review of the plans and information submitted to this Office and all available information contained in our files, additional information and/or changes are required before further review may commence. The information requested is identified in the enclosure.

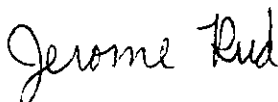
Please submit this information to:

**Mr. Jeff Sewell, Permit Manager**  
**Room N1154**  
**Solid Waste Permit Management Section**  
**Office of Solid and Hazardous Waste Management**  
**Indiana Department of Environmental Management**  
**100 North Senate Avenue**  
**P. O. Box 6015**  
**Indianapolis, Indiana 46206-6015**

In order to provide for a reasonable progression of the permitting process, a response which includes the required information or schedule for providing information must be submitted no later than sixty (60) days from the date of receipt of this letter. Please submit two (2) copies of all items in response to this letter to Mr. Jeff Sewell at the address indicated above.

If you have any general questions regarding this matter, please contact Mr. Sewell at 317/233-5562. If you have questions specific to the above-mentioned plan, please contact the Chemist identified on the enclosure for this letter.

Sincerely,

A handwritten signature in cursive script that reads "Jerome Rud".

Jerome Rud, Chief  
Solid Waste Permit Management Section  
Office of Solid and Hazardous Waste

JS/dcb

Enclosure

cc: Lake County Health Department  
Lake County County Commissioners  
Lake County Solid Waste Management District

## **ENCLOSURE**

### **Dupont, Inc. Sampling and Analysis Plan**

Contact: E. Carroll Hale III  
Solid Waste Chemistry Section

Telephone #: (317) 233-1050

A review of the waste reclassification sampling and analysis plan (SAP) submitted on September 23, 1996 by Dupont, Inc., East Chicago, Indiana, follows.

The SAP described in this document has been reviewed for consistency with guidelines established in 329 IAC 10, and "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" SW-846. The SAP was found to be deficient in two specific areas. These deficiencies must be addressed before this SAP can be approved. Subsequent to modification, the SAP should be resubmitted for review.

#### **Comments**

Sections A through E are complete, and provide enough detail to adequately document the processes whereby the wastes are generated, and the expected amounts of wastes generated.

- ▶ Section A provides generator information, such as the business address, and contacts within that organization.
- ▶ Section B provides information as to the contractor performing sampling and analysis, such as the business address and contacts within that organization.
- ▶ Section C outlines the basic process that wastes are generated from.
- ▶ Section D outlines the raw materials used in production, as well as additives and filtration materials.
- ▶ Section E outlines individual waste stream generation amounts. Individual waste stream percentages of the total of waste generation may be extrapolated from the generation table.

Section F, subsection I is unacceptable. The reasons for unacceptability follow.

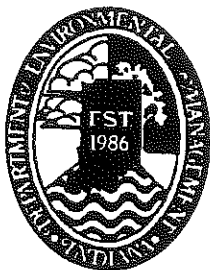
- ▶ Paragraph (a) outlines four waste streams that will be sampled: filter cake, ludox solids, sodium silicate solids, and sodium silicate glass. A fifth waste stream, consol filter, should also be sampled in order to determine the classification of the wastes. In order to determine the effect the consol filter waste will have on the waste classification, two sets of weighted composites should be prepared. One weighted composite should contain consol filter, and one should not. Both weighted composites should be tested by the methods outlined in section F, subsection II. This will allow Dupont to verify the action outlined in the triple-starred note in section E.
- ▶ Paragraph (b) contains no specific information regarding the collection of samples. Since a consultant is performing sampling and analytical duties, the consultant should prepare a statement outlining the specific sample collection methods, collection devices to be used, sample containers to be used, decontamination methods, etc. This statement should be included as part of the SAP.
- ▶ Paragraph (d) should stipulate that at least two composite samples are prepared for each 7-10 day sampling interval. This will allow for the above outlined determination of the classification of wastes excluding and including the consol filter waste stream.

Section F, subsection II is basically acceptable, with one stipulation.

- ▶ Organic analysis has been excluded from the list of toxicity characteristic leaching procedure (TCLP) methods. Subsection IV, paragraph (d) mentions that organic additives comprise less than 1/100 of a percent of the total waste output. More information regarding the amounts of organic additives, and the composition of the additives must be submitted before an exclusion on organic analysis can be accepted. This information can be in the form of material safety data sheets or other such documents coupled with specific addition rate information. Also acceptable is the valid results of prior organic analyses on the waste streams, such as from a previous waste classification submittal (presuming that the process has not been changed since that submittal).

Subsections III and IV are acceptable, with more information regarding section IV, paragraph (d) being requested as mentioned above.

Section G is acceptable.



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live*

*Evan Bayh*  
Governor

*Michael O'Connor*  
Commissioner

100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
Telephone 317-232-8603  
Environmental Helpline 1-800-451-6027

VIA CERTIFIED MAIL Z 339 825 600

Mr. Chet Ciecko  
DuPont Specialty Chemicals  
5215 Kennedy Ave.  
East Chicago, IN 46312

August 20, 1996

Re: DuPont On-site Waste Disposal Facility  
Site Visit & Meeting, February 7, 1996  
Lake County

Dear Mr. Ciecko:

The purpose of this letter is to recap the site visit and meeting of February 7, 1996, with Mr. Greg Lorenz, Mrs. Daniela Klesmith, Mr. Alan Schmidt, and Mr. Jeff Sewell, of the Indiana Department of Environmental Management (IDEM) and you and Ms. Stacy Dedinas of DuPont. Additionally, this letter will provide guidance for bringing the DuPont on-site disposal facility into compliance with the current solid waste regulations.

Upon consideration of the information that was related by you and Ms. Dedinas during the February 7, 1996 tour of the DuPont facility and inspection of the on-site disposal facility, IDEM has made the following determinations:

1. All wastes are Type III or lower and fall within the lower range of Type III for parameters in Type III. Therefore, wastes pose a low risk for environmental harm;
2. DuPont is reasonably and responsibly operating the site currently for the waste types being disposed;
3. DuPont is rigorously pursuing waste minimization and pollution prevention initiatives which may make the disposal facility unnecessary—a practice this Agency wishes to encourage; and
4. DuPont is preparing to enter a corrective action program under RCRA with the U.S. EPA and this Office would like to coordinate our activities with the EPA's.

During the site visit of February 7, 1996, it was stated that the existing and closed fill areas may have been lined with a six (6) inch layer of Bentonite. You indicated that you would investigate the technical specifications used during the construction of the existing and closed fill areas. IDEM requests that you prepare a report detailing the technical specifications of the fill areas to be submitted to the Office of Solid and Hazardous Waste Management (OSHWWM) within thirty (30) days of the receipt of this letter.

DuPont has continued disposal under interim status in accordance with the on-site disposal notification per the requirements of 329 IAC 2-5-2 (repealed 1996). The intent of an interim status permit was to provide a transition period for bringing solid waste disposal facilities, which were not regulated prior to the adoption of 329 IAC 2, into compliance with the regulations. This transition

period allowed time for pursuing a solid waste facility permit or closing the on-site disposal facility and making other arrangements for final disposal of the waste.

DuPont has been implementing plans to eliminate the need for a solid waste disposal facility through waste minimization and pollution prevention initiatives. In an effort to foster these positive efforts, and in consideration of the determinations indicated above, IDEM has allowed the continued operation of the on-site disposal facility. With the adoption of 329 IAC 10, DuPont is again in a position to submit an on-site notification to provide a transition into the new article per the requirements of 329 IAC 10-5-2(a) or cease disposal in the on-site disposal facility.

IDEM wishes to encourage DuPont's on-going pursuit of waste minimization and pollution prevention initiatives. However, reasonable time has been provided for DuPont to phase out disposal in the on-site disposal facility or pursue a solid waste facility permit to achieve compliance with 329 IAC 2 as superseded by 329 IAC 10. Therefore, DuPont must provide in writing, no later than thirty (30) days from the date of this letter, DuPont's intention to proceed with one of the options below:

- 1.) State intention to obtain a solid waste facility permit in accordance with 329 IAC 10; submit information required by 329 IAC 10-5-2(a) to achieve interim status; and submit an application for a solid waste disposal facility permit no later than January 1, 1997; or
- 2.) Submit information required by 329 IAC 10-5-2(a) to achieve interim status; cease disposal in the on-site disposal facility effective January 1, 1997 and submit a closure plan for approval by IDEM. You may consult with Mr. Alan Schmidt of the Solid Waste Engineering Section at (317) 233-1517 for guidance in the development of a closure plan for the on-site disposal facility.

You have indicated during phone conversations with Mr. Jeff Sewell of this Office that your pollution prevention initiatives are showing signs of success and that DuPont's wastes might be reclassified as Type IV. Although IDEM is seeking resolution of DuPont's interim status, you should be advised that this does not preclude DuPont from seeking a reclassification of its waste to a Type IV. If DuPont's wastes are Type IV, disposal of these wastes on-site would be allowed without a permit subject to the criteria indicated in 329 IAC 10-3-4. Reclassification of DuPont's wastes to a Type IV will not relieve DuPont of their obligation to undergo closure for the existing fill area. Should you wish to pursue a reclassification of DuPont's wastes you are invited to consult with Mr. E. Carroll Hale III of the Solid Waste Chemistry Section at (317) 233-1050 for guidance in the development of a sampling and analysis plan for reclassifying the waste.

If you have any questions regarding this matter, please contact Mr. Jeff Sewell of this office at (317) 233-5562.

Sincerely,



Laura Steadham, Chief  
Solid Waste Facilities Branch  
Solid and Hazardous Waste Management

JS

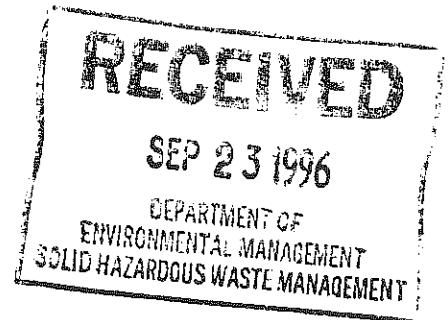
cc: Lake County Health Department  
Lake County Commissioners  
Lake County Solid Waste Management District



DuPont Specialty Chemicals

September 20, 1996

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



Jeff Jewell, Solid Waste Permit Manager  
Solid Waste Facilities Branch  
Solid and Hazardous Waste Management  
Indiana Department of Environmental Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

RE: DU PONT ON-SITE WASTE DISPOSAL FACILITY  
RESPONSE TO AUGUST 20, 1996 LETTER

In response to your letter of August 20, 1996, we submit the following:

1. It is DuPont's intent to submit information required by 329IAC 10-5-2(a) to achieve interim status; cease disposal of Type III material in the on-site disposal facility effective January 1, 1997 and submit a closure plan for approval by IDEM.
2. Technical Procedures for the Construction of Filter Cake Landfill East Chicago Plant (attached).

We, too, are encouraged by the results of our pollution prevention activities and are working toward reclassification of our material to Type IV.

If you have any questions, please call Chet Ciecko at (219) 391-4676.

Sincerely,

Chester F. Ciecko  
Safety, Health and  
Environmental Manager

CFC/amg  
Attachment





**AGENDA**  
**DUPONT EAST CHICAGO**  
SEPTEMBER 30, 1996 9am  
IDEM Northwest Regional Office  
504 N. Broadway Suite 418  
Gary, Indiana

1. The purpose of this meeting is to discuss the Grand Calumet River revitalization and the importance of coordinating DuPont's environmentally-related issues with the revitalization activities. *(15 minutes)*

- ▶ Remedial action plan
- ▶ Partnership (including Sediment Cleanup and Restoration Alternatives Project with U.S. Army Corps).
- ▶ Corridor planning activities.

2. Environmental issues affecting DuPont and strategies for resolving them. *(25 minutes)*

- ▶ Solid waste disposal unit.
- ▶ Refractory brick and flue dust storage violations and closure of units.
- ▶ Groundwater and contamination source concerns.
- ▶ Sediment investigation and cleanup.

3. Corrective action. *(25 minutes)*

- ▶ Overview of draft 3008h order.

4. Natural resource damage assessment and restoration. *(30 minutes)*

- Description of assessment, planning and restoration process.
- Potential funding and participation agreement for Northwest Indiana assessment plan.

*(Lunch Break - 45 minutes)*

5. DuPont's perspective. Current activities, concerns, proposals. *(30 minutes)*

6. Next Steps. Joint Discussion. *(45 minutes)*

- ▶ Contact persons.
- ▶ Finalization of documents.
  - Corrective action.
  - Solid waste permit.
  - Hazardous waste order.
  - Funding and participation agreement for natural resource damages.
- ▶ Schedule regular meetings.
- ▶ Commitment to partnership. DuPont and agencies can demonstrate continuing good faith and commitment to cooperation by moving forward while agreement(s) are under negotiation.



# Sign in Sheet

9/30/96

Name	Organization	phone	fax
Beth Admire	IDEM	(317) 233-5946	(317) 233-5517
Kay Nelson	IDEM	(219) 881-6712	(219) 881-6745
Sally Swanson	USEPA	312 353 8512	312 886-2737
Lyn Flaim	Du Pont	219/391-4601	219/391-4678
Bernie Reilly	Du Pont	302-774-5445	302-774-1189
STEPHEN EHEM	DUPONT	302-992-6575	302-892-7644
Bill Lawrence	Du Pont	302 774-8491	302 773-1829
CHET CIECKO	Du Pont	(219) 391-4676	(219) 391-4678
Allen Wojtas	USEPA	(312) 886-6194	(312) 353-4781
Mary McAuliffe	U.S. EPA	(312) 886-6237	(312) 886-0747
Bill Tong	U.S. EPA	(312) 886-9380	(312) 886-0168
Mike Mikulka	U.S. EPA	(312) 886-6760	<del>886-4787</del> 353-4787
Ian Ewusi-Wilson	IDEM	(317) 308-3140	
Mary Fulghum	IDEM	219 881-6712	-6745
Scott Ireland	IDEM	(317) 233-1432	(317) 233-5968
Jim Smith	IDEM/DER	(317) 308-3003	(317) 308-3063
Mary Ann Habus	IDWR-F&W	317 233-3852	317-232-8035
Pam O'Rourke	IDEM/OE	317/232-7207	317/233-5968
Pat Carroll	IDEM/Enf	317/233-5523	317/233-5968
- Nancy Spencer	DOH	on phone	
- Mike Sickle	IDEM	on phone	
- Shelly Hall		on phone	



CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

DE-9J

Ms. Katherine A. Wiedeman  
Environmental Manager  
Mead Paper Division  
Post Office Box 2500  
Chillicothe, Ohio 45601-0997

RE: Comments on Report of  
Findings Addendum #3 to the  
Task 2 Plume Delineation  
Mead Storage Depot  
OHD 043 730 209

Dear Ms. Wiedeman:

In September, 1993 Mead Corporation entered into an Administrative Order on Consent (AOC) Docket No. V-W-34-93 with the United States Environmental Protection Agency (U.S. EPA). MW Custom Papers, LLC submitted a Report of Findings, Addendum #3 to the Task 2 Plume Delineation dated March 12, 2003 to the United States Environmental Protection Agency (U.S. EPA). This investigation included monitoring well installation and sampling, soil sampling, and surface water sampling to further delineate the groundwater plume. The investigation has raised many questions concerning the site and additional action may be necessary. The enclosed comments address U.S. EPA's concerns over the site and some requests for additional data.

Thank you in advance on your cooperation on this matter, and if you have any further questions or concerns please contact me at (312) 886-1451.

Sincerely yours,

Christopher J. Black  
Corrective Action Section  
Enforcement and Compliance Assurance Branch  
Waste, Pesticides and Toxics Division

Enclosure:

**U.S. EPA Comments on the MW Custom Papers, LLC Report of Findings, Addendum #3 to the Task 2 Plume Delineation dated March 12, 2003**

**General Comments**

1. This report discusses to a limited extent the soil and surface water results. Comparison of these results against risk based screening levels is important. An assessment of the risk posed to human health and the environment by the VOC impact on off-site property is imperative. Additional soil and surface water samples may be necessary to adequately assess the VOC impact. Many receptors are present in the off-site property and the VOC's potential impact on them needs to be addressed.
2. The report discusses the model for contaminant flow in the lower aquifer, and a case for complete discharge of the lower aquifer into the marsh area has not been made. The lack of a strong vertical gradient, and the lack of monitoring points in the direction of flow are not sufficient to support this model. Additional monitoring wells need to be added along Schooley Road east of the current monitoring wells to sufficiently assess the lower aquifer contamination.
3. The contamination to the southeast is beyond the influence of the pumping well and continues to migrate. An assessment of possible remediation methods to address the uncaptured plume would be beneficial to overall site remediation.

**Specific Comments**

1. **Section 1.1, page 1, paragraph 2.** The text states that the 1995 investigation determination was confirmed by the results of the 2003 investigation, that is, no VOCs in the Schooley Road groundwater monitoring wells downgradient of D504-39, and low levels of 1,2 DCE detected in the stream at Schooley Road confirm that groundwater from the area of concern is discharging to the wetland areas before reaching Schooley Road. This conclusion would be valid except for the concerns raised by water and soil sample results in the marsh area. These results have not been assessed for the ecological risk and the human health risk on the off-site property. The human health receptors include, but are not limited to, residents or workers who walk in this area, possible construction workers, or trespassers. The ecological receptors include, but are not limited to, livestock who graze the plants or drink the water in this area, native plants and animals that live in or traverse this area. An additional concern is the lack of confirmatory wells covering the eastern edge of the plume along Schooley Road. The location of the previous monitoring wells D308-53 and D301-39 are the ideal location for two new wells to confirm that there is no impact to the lower aquifer in that area. In addition this would provide a needed sampling point for future confirmatory sampling.
2. **Section 1.1, page 2, paragraph 3.** The decline in total VOC's in the D-300-40 in 1995 (538 :g/L) and D-504-39 in 2003 (330 :g/L) is stated as 40% , yet the comparison of what constituents changed and how that reflects on the change in the groundwater plume is not analyzed.
3. **Section 2.1, page 4, paragraph 1.** At this point in time , U.S. EPA determines that the 600 series wells will continued to be sampled as long as they provide relevant data to characterize and monitor the groundwater plume.
4. **Section 3.3, page 10, paragraph 1.** The original February reading for depth to water in well

D504-39 was listed as 7.27. feet, but that level was said to be erroneous, and 11.27 feet was the correct value. Please provide an explanation for the erroneous reading and why the 11.27 feet is the assumed correct value.

5. **Section 3.4, pages 11, paragraph 2.** This paragraph discusses the groundwater results in Table 3. The total VOC concentrations are higher in the upper portion of the aquifer than in the lower portion. Comparison of the upper aquifer chemistry between the two wells shows that well 600-25 has more degradation products of TCE (1,2 DCE and vinyl chloride) than well 601-26. In addition well 601-26 has TCE and no detectable vinyl chloride, indicating that the contaminants have not degraded as rapidly in this area of the upper aquifer. The interpretation of the groundwater results need to expand beyond total VOCs and include the comparison of TCE and it's degradation components. Addition of this discussion sitewide will help determine the fate and transport of the contaminants across the site and help assess the effectiveness of the current remedy.
6. **Section 3.4, page 12, paragraph 2.** The comparison of the VOC plume in 1995 and 2000 Reports is stated as "not appreciably different". The major change are the new data points, the 600 series wells, in the southeast portion of the plume help to better that define the plume. Also higher concentrations of the plume have migrated farther south nearer to Schooley Road. In addition, the two finger plume from the 1995 Report is less distinct in the 2000 Report and appears to cover a wider area.
7. **Section 3.4, page 12, paragraph 2.** The sentence referring to Figure 6 states " The information obtained from the present evaluation does not contradict the conclusions of the original investigation concerning the rate and extent of the VOC plume in the lower aquifer." This conclusion rests on the assumption that the lower aquifer discharges completely to the marsh. The lower aquifer may have a component of flow under the marsh area in a southeast direction and the extent of this VOC extent has not been determined. There also is limited control on the extent of the plume east of a line between D-600 and D-503-40. On Figures 5, surface water sampling points are plotted together with groundwater sampling points and assumed to be connected with the lower aquifer and plotted with the lower aquifer data. The connection between the two is not completely valid, as a portion of the lower aquifer flows under the marsh and the screened zones of the lower aquifer wells are below the elevation of the surface samples.
8. **Section 3.4, page 12, paragraph 3.** How does this basic exercise to determine flow rate and transmissivity relevant to our discussion? Please reference the source of the hydraulic conductivity number and the hydraulic gradient number presented in the text? A pump test, slug test, or permeameter test would give you field data from the site that could be used in determining hydraulic conductivity. The flow rate of the water through the aquifer will not tell the migration of the contaminants, although a useful tool in fate and transport modeling.
9. **Section 3.5, page 13, paragraph 2.** The results in Table 5 show high detection limits for TCE and vinyl chloride, 6 ppb- 30 ppb for TCE and 9 ppb - 50 ppb for vinyl chloride. The high detection limits make it difficult to compare the soil sample results against applicable soil screening values. Analysis of the soil samples and how they relate to ecological numbers, or soil cleanup numbers was not conducted.
10. **Section 3.5, page 13, paragraph 3.** The detection of acetone, MEK, and carbon disulfide in the soil samples is significant. The report suggest these are artifacts of sampling or natural

occurrences. Do field blanks, trip blanks, or duplicate samples show detections of acetone, MEK, and carbon disulfide? Where any of these QA/QC procedures followed in the soil sampling? The laboratory used for analysis is Mead's own, issues of conflicts of interest arise when analysis is performed by Mead on a sample from a Mead facility. Was there confirmatory sampling conducted by an outside laboratory?

11. **Section 4.1, page 14, last paragraph .** The text concludes in this paragraph that no significant head differentials are present at well nests D 600 and D 601. This information indicates that there is no significant vertical gradient in the lower aquifer. The lack of a strong vertical gradient suggests that a significant portion of the flow from the lower aquifer does not discharge to the marsh, but continues to flow under the marsh area in a southeast direction.
12. **Section 4.2, page 15, paragraph 1 .** The VOCs are being discharged to the Marsh and Unnamed Creek Area, this area is off of Mead's Property and on Brown's Property. The impact of these VOCs must be assessed as to the risk they pose to humans and the ecosystem on Brown's Property.
13. **Section 4.2, page 15, paragraph 3 .** The current locations of the Schooley Road monitoring wells are not far enough east along Schooley Road to monitor the lower aquifer adequately in this area. The assessment of the plume needs to include these westernmost wells, due to the current groundwater flow direction and the lack of a strong vertical gradient in the aquifer that indicates partial discharge to the marsh area.
14. **Section 4.2, page 15, paragraph 4 .** The decline in VOCs has occurred but, after an initial drop, has reaches an asymptotic plateau. The pump and treat system has showed limited radius of influence upon the aquifer as indicated by Figure 4. The slug of the plume that has escaped the influence of the pump well has migrated to the wetland/marsh area and beyond possibly to Schooley Road. A new remediation approach to the uncaptured plume should be addressed. The alternative is the continuing contaminant loading of the wetland off of Mead's property which can impact soils, wildlife, livestock, surface water, plants and humans now and into the future.





LEGAL  
Wilmington, Delaware 19898

September 23, 1991

**Certified Mail**  
**Return Receipt Requested**

Dale S. Bryson, Director  
Water Division, U. S. EPA Region V  
5WCC-TUB  
230 South Dearborn Street  
Chicago, Ill. 60604

Re: Du Pont Response To June 27, 1991 Ltr. DSB to NDG  
Second §308 Information Request - East Chicago Plant

Dear Mr. Bryson:

In my letter to you of July 12, 1991, which provided your office with Du Pont's June, 1991 Monthly Monitoring Report pursuant to the §308 Information Request (Docket No. V-W-91-308-11) served upon Du Pont's East Chicago, Indiana facility in February, 1991, I indicated that Du Pont would be responding to the items listed in the above-referenced letter under separate cover. We will attempt to do that below. However, after addressing each of the four points raised in the June 27th letter, we would like you to consider the points that follow regarding the advisability of continuing the sampling program.

For ease of reading, each of the four points in your letter is in bold print and precedes Du Pont's response/comment.

1. **Two additional seeps have been found since the initial request, and Du Pont has initiated a sampling program similar to the "one-time" and "monthly" monitoring programs requested on the first seeps. We ask that you provide us with this data and continue the monthly monitoring for a period not to exceed one year.**

Rsp. A clarification of your use of the plural "seeps" is in order. It is our understanding that the February 13, 1991 Information Request was directed at a single seep, hereinafter referred to as "Seep 1", not multiple "seeps". We would also request that these areas be more accurately referred to in future communications as "groundwater



seeps" as we will do herein. For convenience we will refer to the groundwater seeps by the letters "GS" prior to the seep number.

One-time monitoring similar to that performed at GS 1 was performed at GS 2 on April 4, 1991 (and April 25, 1991 due to limited bottle breakage in transport of April 4th samples) and at GS 3 on April 25, 1991 (and May 23, 1991 due to laboratory error in handling a portion of the April 25, 1991 samples). A report summarizing the results of this sampling and analysis is currently being prepared by CH2M Hill and will be submitted under separate cover in the near future.

Du Pont authorized CH2M Hill to perform monthly sampling at GS 2 and 3 in June, 1991. That monthly sampling differed from the Monthly Monitoring Program ("MMP") described in the Information Request dated February 13, 1991, in that one sample was to be collected per month instead of the four samples per month as set forth in the MMP for GS 1.

CH2M Hill's sampling team attempted to perform this monthly sampling during the last week of June and before receipt of the subsequent §308 Information Request contained in your June 27, 1991 letter.

We directed CH2M Hill to implement the MMP for GS 2 and 3 consistent with the June 27, 1991 Information Request upon receipt of this correspondence. CH2M Hill started implementing this program during the second week of July, 1991. The sampling team typically visits the site on Thursdays to perform weekly sampling.

Variations in hydraulic conditions at the riverbank complicate implementation of a program that calls for weekly sampling. The characteristics of the groundwater seeps (the surface expression of the water table) vary, as do the characteristics of the groundwater beneath the land surface. As groundwater levels rise and fall in response to recharge (from precipitation), seep flow rates can increase and decrease. During periods of little rainfall, seeps can dry up completely making it impossible to sample. This occurred in June at GS 2 and also occurred at GS 1 and at GS 3 at other times.

Variations in Grand Calumet River levels affect local groundwater seep conditions. The seeps are submerged (as is the rest of the groundwater discharge area) when river levels rise in response to increases in rainfall-runoff and outfall discharge. During these conditions seep samples and flow data cannot be collected.



The following flow data (measured between March and August, 1991) illustrate the variability of the hydraulic conditions at the seeps:

Flow Rates (gpm)

<u>Date</u>	<u>GS 1</u>	<u>GS 2</u>	<u>GS 3</u>
3/ 6/91	0.33	-	-
3/15/91	0.41	-	-
3/21/91	0.01	-	-
3/28/91	0.10	-	-
4/ 4/91	0.32	13.81	-
4/11/91	0.13	14.91	-
4/18/91	1.57	29.93	0.80
4/25/91	1.12	15.42	0.98
5/ 2/91	0.48	12.33	0.01
5/ 9/91	0.97	14.60	0.12
5/16/91	0.78	4.85	Dry
5/23/91	0.87	8.83	0.03
5/30/91	1.2	9.12	0.15
6/ 6/91	1.25	1.82	0.96
6/13/91	1.15	1.57	0.85
6/20/91	0.88	Dry*	Submerged*
6/27/91	0.18	Dry	0.96
7/ 2/91	0.93	Submerged	Submerged
7/11/91	0.72	Dry	Submerged
7/18/91	0.48	Dry	Submerged
7/25/91	0.35	Dry	Submerged

\*During these conditions, groundwater seeps do not exist and are not present for purposes of sampling.

During late June when the sampling team attempted to start monitoring GS 2 and 3 for the parameters specified by you for monthly monitoring, GS 2 was dry. Therefore only GS 3 was sampled.

In an effort to be responsive to your Information Request, the team tried to collect samples on July 2, 11, 18 and 25, 1991. July MMP samples could not be collected at either GS 2 or 3. Samples were collected at GS 1. The MMP data for GS 3 collected in late June will be included in the July Monthly Monitoring Report.

Note that combined seep flows this summer have been typically less than 2-3 gpm. This constitutes less than 1/70,000 of the "dry weather" flow in the Grand Calumet River (based on U.S.G.S. 1987 data).



Du Pont initiated a MMP at GS 2 and 3 in good faith, prior to receipt of your June 27th letter, without committing to continuing this program for a "...period not to exceed one year.". We would like to meet with you to discuss the technical need for continuing this monitoring.

2. Du Pont suggested that single grab samples can be substituted for composite samples, as supported by Table 2, "Comparison of Composite Sample Analytical Results to Grab Sample Analytical Results". We concur, and 3A2 shall be revised to require "weekly grab samples comprising..., collected at regular intervals"...

Rsp. Upon reviewing the above language and that in the February 13, 1991 Information Request, it is Du Pont's understanding that we can substitute "weekly single grab samples" for "weekly 8-hour, flow proportioned composite samples, comprising no fewer than three (3) grabs, collected at regular intervals.". If this interpretation is in error, please clarify.

We assume that this approach is acceptable for GS 2 and 3 as well as GS 1.

3. Du Pont suggested elimination of analyses for several parameters, we agree that analyses for some of these parameters can be eliminated for only the first seeps at this time. They are:

BOD - Five Day  
Oil and Grease  
Copper

After review of subsequent reports, additional parameters can be dropped. Further, upon review of data on the other seeps, similar screening can be done.

Rsp. It is our understanding that three of the five parameters we asked in mid-June, 1991 to drop from the MMP can be dropped. We appreciate your openness to eliminating constituents that you deem are no longer relevant for characterizing groundwater seep quality. Nevertheless, we do not understand the need to continue monitoring for many of the constituents contained in the Request. Most of these analyses more reasonably and typically apply to traditional wastewater discharges rather than groundwater discharges. The rationale for continuing to monitor nitrite is especially unclear given the fact that nitrite has been detected at a concentration greater than the method detection limit of 0.01 mg/l on only one occasion.





We would appreciate your help in explaining the rationale for the sampling and analysis program as it presently exists and the level and nature of information required by your office in order to decide that these analyses are not necessary.

4. **For clarification purposes, please assign an identification name to each seep (like seep 1, seep 2 and seep 3) and locate on the sketch previously provided. This can accompany your next submittal.**

Rsp. Attached is a map illustrating the locations of GS 1, 2, and 3. These locations have not been illustrated on the map originally provided because we believe the new map better illustrates site conditions. If this substitution is not acceptable, please let us know.

As you know, Du Pont is in the second year of a site study to determine groundwater conditions at its East Chicago Facility. The results of that work will also assist us in characterizing the groundwater discharge to the Grand Calumet River. It is our intent to incorporate groundwater seeps along the riverbank into the overall groundwater investigation and cleanup effort at the Facility.

Groundwater seeps represent a small fraction of the estimated groundwater discharge to the Grand Calumet River and an even smaller fraction of the flow in the Grand Calumet River under "dry weather" streamflow conditions. Thus, these seeps have very little impact on the overall water quality of the Grand Calumet River.

I'm sure you appreciate the difficulties of approaching a project on a piece-meal basis, including the problems of budgeting, scheduling and drawing conclusions toward a plan of action from the various segments of work. Du Pont has committed approximately \$235,000 on seep characterization/analytical work to comply with the §308 Orders. Weekly sampling and monthly reporting costs, assuming all three seeps can be sampled, cost approximately \$26,000 per month. Projected over the next six months, that amounts to \$160,000. This money would be better spent on developing an environmental approach for the entire site, including the groundwater seeps rather than addressing them separately.

As you probably know, we were served on Friday (9/20/91) with an information request under §104(e) of the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA"). If it is Region V's intention to address this site under CERCLA, we would appreciate the opportunity to meet with you and representatives of the Waste Management Division to discuss this matter in the hope that the Agency can proceed in a unified fashion to address the overall environmental issues at the facility.



We look forward to hearing from you regarding the matters contained herein and hope that a meeting can be scheduled to discuss this matter further.

Very truly yours,



Norman D. Griffiths  
Counsel  
Environmental Law Group

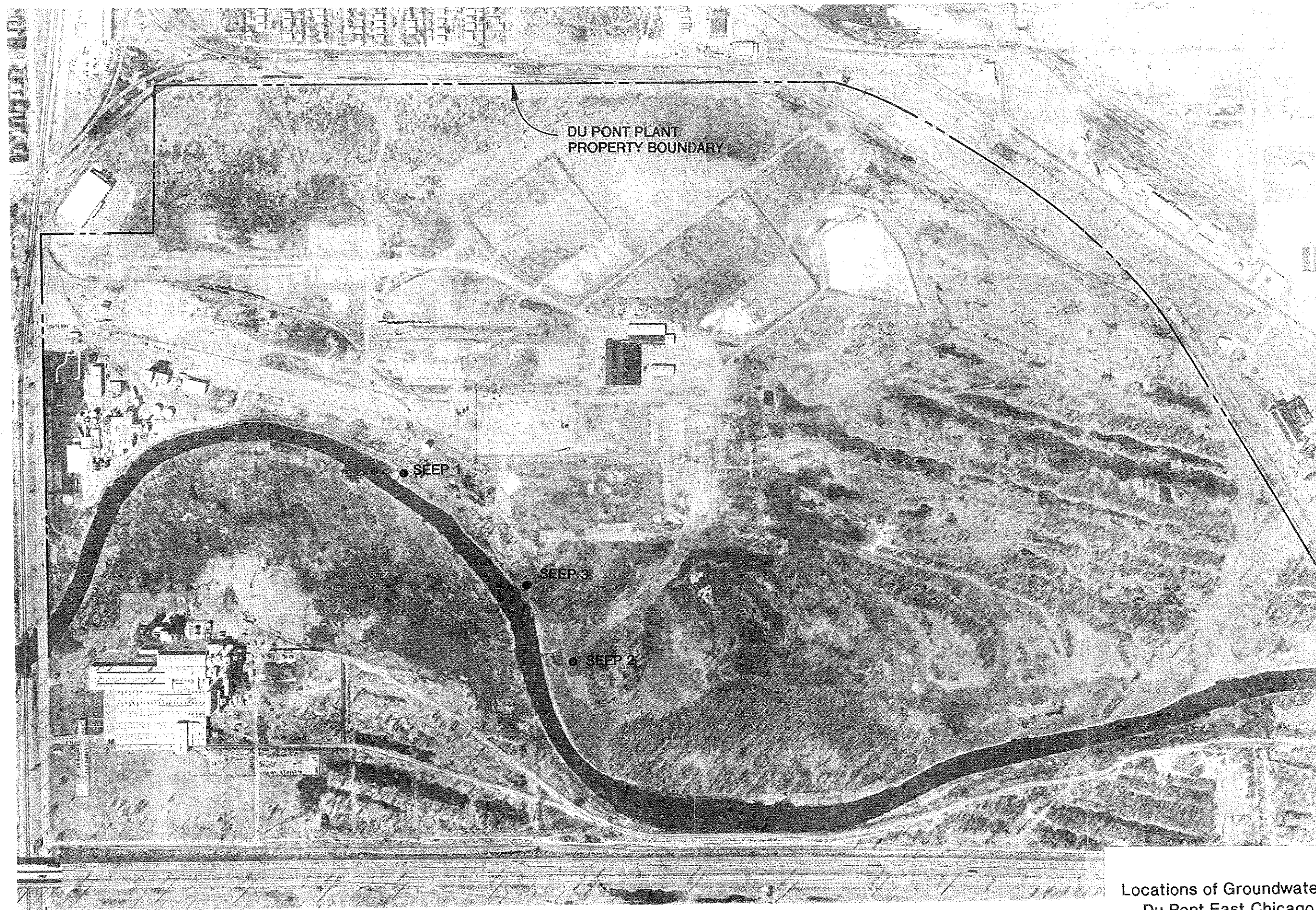
cc: Jodi Lynn Traub, Associate Director (w/encl.)  
Waste Management Division  
USEPA - Region V - 5 HWM TUB - 7

E. F. Hartstein, Plant Manager, (w/encl.)  
Du Pont East Chicago Plant

Attachment  
Est.Chicago./14.







Locations of Groundwater Seeps  
Du Pont East Chicago Plant

RECEIVED  
SEP 20 1991

SUPERFUND PROGRAM  
MANAGEMENT BRANCH



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<p>3. Article Addressed to: <b>E.F. Hartstein</b>  <b>Facility Manager</b>  <b>E. I. Dupont Company</b>  <b>5215 Kennedy Avenue</b>  <b>East Chicago, IN 46312</b></p>	<p>4. Article Number  <b>P 366 207 712</b></p> <p>Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured  <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD  <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>Always obtain signature of addressee or agent and <u>DATE DELIVERED</u>.</p>
<p>5. Signature — Addressee  <b>X [Signature]</b></p>	<p>8. Addressee's Address (ONLY if requested and fee paid)</p>
<p>6. Signature — Agent  <b>X</b></p>	
<p>7. Date of Delivery <b>9/20/91</b></p>	

PS Form 3811, Apr. 1989 \*U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT





→ Thad  
FYI

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V

Date: **APR 17 1991**

Subject: Proposal for Combining the CWA Section 308 and CERCLA Section 104 Information Requests in One Letter to the DuPont Facility in East Chicago, Indiana

From: Jerri-Anne Garl *Jerri Garl*  
Chief, Ground Water Protection Branch

To: Dale S. Bryson  
Director, Water Division

**Background**

William Melville of my staff has participated in the formation of a multi-media team to oversee DuPont's voluntary remedial investigation of the ground water contamination associated with their facility in East Chicago, Indiana. The principal players on this Review Team are Joe Malek and Fred Micke, CERCLA, Joe Boyle and Carol Witt-Smith, RCRA and Jim Novak, Bob Tolpa and William Melville, Water Division. In discussing the status of DuPont's voluntary remedial investigation and the observed presence of two ground water seeps discharging into the Grand Calumet River, it became apparent to the Review Team that the Agency would require additional information to better assess the level of contamination associated with the DuPont site.

**Action Item**

To promote the concept of multi-program enforcement and oversight of facilities, the Review Team would like to submit one information request letter to DuPont. This letter would identify the information requested under the CWA, CERCLA and RCRA authorities. The advantages of submitting one letter are that we can ensure there is no duplication in the information requests and DuPont will have to prepare only one response memo. This consolidated letter format will demonstrate to DuPont that U.S. EPA is committed to a thorough multi-program process and that we are willing to be cooperative in our oversight of their voluntary remedial investigation.

The decision of who should sign a consolidated information request letter has not been finalized. We would like your input on whether a joint signature of the CERCLA and CWA representatives is necessary or if a lead program should be designated for signature authority. We would like to discuss this issue with you as soon as possible.



542

If you have any questions, please contact one at 6-1490 or William Melville at 6-1504.

cc: J. Boyle  
T. Cayer  
K. Fenner  
J. Grand  
J. Malek  
W. Melville  
M. Milkulka  
J. Novak  
J. Fillipini



JUN 27 1991

5WCC-TUB-8

**CERTIFIED MAIL P 606 819 834**  
**RETURN RECEIPT REQUESTED**

Norman D. Griffiths, Esq.  
E.I. DuPont DeNemours & Co., Inc.  
Legal Department, Suite D-7007  
1007 Market Street  
Wilmington, Delaware 19898

Re: Section 308 (Clean Water Act)  
Information Request  
E.I. DuPont DeNemours & Co., Inc.  
NPDES Permit No. IN0000329  
Docket No. V-W-91-308-11

Dear Mr. Griffiths:

This letter is to respond to DuPont's concerns and to amend the above referenced Information Request as follows:

1. Two additional seeps have been found since the initial request, and DuPont has initiated a sampling program similar to the "one-time" and "monthly" monitoring programs requested on the first seeps. We ask that you provide us with this data and continue the monthly monitoring for a period not to exceed one year.
2. DuPont suggested that single grab samples can be substituted for composite samples, as supported by Table 2, "Comparison of Composite Sample Analytical Results to Grab Sample Analytical Results." We concur, and 3A2 shall be revised to require "weekly grab samples comprising ...~~✓~~ collected at regular intervals"....~~✓~~
3. DuPont suggested elimination of analyses for several parameters, we agree that analyses for some of these parameters can be eliminated for only the first seeps at this time. They are:

BOD - Five Day  
Oil and Grease  
Copper





After review of subsequent reports, additional parameters can be dropped. Further, upon review of data on the other seeps, similar screening can be done.

4. For clarification purposes, please assign an identification name to each seep (like seep 1, seep 2 and seep 3) and locate on the sketch previously provided. This can accompany your next submittal.

Finally, the March and May submittals were provided by Mr. E. F. Hartstein and the April submittal was provided by you. I assume that you are DuPont's designated contact consistent with your letter of February 21, 1991. Please note the reminder in our March 18, 1991, letter that any written statements submitted pursuant to the subject Request must be notarized and returned under an authorized signature certifying that all contents contained herein are true and accurate to the best of the signatory's knowledge and belief. (See last paragraph on page 5 of the Request).

If you have any questions, please contact Mr. James Novak at (312) 886-0177.

Sincerely yours,

TRIAL SIGNED BY  
JOHN T. GRAND

Dale S. Bryson  
Director, Water Division

cc: E.F. Hartstein, DuPont  
Mark Stanifer, IDEM

bcc: Tolpa, 5WCC  
Melville, 5WG  
Malek/Micke, 5HSM  
Filippini/Mikulka, 5WCC  
Mendoza, 5CA  
308 File

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JUL 1 1991

U.S. EPA REGION V  
OFFICE OF REGIONAL COUNSEL



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V

DATE: MAR 29 1991

SUBJECT: Legal Support Sampling Inspection (LSI ) - E. I.  
DuPont DeNemours and Company, Inc., East Chicago,  
Indiana (IN0000329) (AFE137:D7)

FROM: Basim Dihu, Environmental Engineer  
Central District Office (5SCDO)

TO: Michael J. Mikulka, Chief *JPM*  
Compliance Section (5WQC)

THRU: Willie H. Harris, Chief  
Central District Office (5S CDO)

Acting on Mr. Dale S. Bryson, Director, Water Division's request dated December 18, 1990, the subject facility was visited on December 19, 1990. The purpose of the inspection, was to conduct a Priority One sampling inspection, of an unpermitted discharge from the E.I. DuPont de Nemours plant in East Chicago, Indiana.

REGULATORY REPRESENTATIVES

The regulatory representatives who participated in the inspection are listed below:

<u>Name/Title</u>	<u>Affiliation</u>	<u>Telephone#</u>
Ronald Kovach, Environmental Protection Specialist, Enforcement Unit I / Water Division	US EPA	(312) 886-1441
William Melville, Environmental Engineer Ground Water Protection Branch / Water Division	US EPA	(312) 886-1504
Skip Bunner Environmental Engineer Office of the Commissioner	IDEM	(317) 232-8602
Basim Dihu Environmental Engineer ESD / CDO	US EPA	(312) 888-6242



### PRIMARY SITE CONTACTS

Upon site arrival and during the inspections, credentials were presented to the appropriate facility personnel. Our primary site contacts are listed below:

O.J. (Jerry) Meyer, Senior Supervisor  
E.F. Harstein, Plant Manager, E.I. Dupont

### FACILITY DESCRIPTION

The facility is involved in the manufacture of Colloidal Silica (LODUX), and sodium silicate. The plant SIC code is 2819 - General Inorganic Chemical. The plant operates three shifts, 5 days a week - 52 weeks a year and employs approximately 53 employees.

### SAMPLING PROCEDURES

Mr. Ronald Kovach instructed me to take a grab sample from a standing pool of water (See Attached Photos). The surface water runoff to the Calumet River was very minimal. Only water drops were observed going to the river. A grab sample of 91CD01S01 was taken on December 19, 1990, at 12:35 pm. Reagent blank was also prepared at the site. The sample was preserved, kept on ice, and maintained under Chain-of-Custody until they were delivered to Central Regional Laboratory, U.S. EPA, Region V.

### LABORATORY ANALYSIS

Due to sampling difficulty, Sample 91CD01S01 contained sludge-type material at the bottom of the sample bottle. The sample was split into two portions and extracted separately by two different techniques (water and sediment) by CRL. The samples were analyzed by GC/MS techniques. The water sample data are acceptable for use; but the sediment data are not acceptable for use since the laboratory failed to collect the data by the CRL standard quality assurance protocols.

The samples were extracted within seven days of collection, and analyzed within 40 days of extraction as required by the Clean Water Regulations (40 CFR Part 136 October 26, 1984). See the laboratory data sheets for more details.

### SURVEY RESULTS

The results of the grab sample are presented on the attached data sheets. Other significant inspection findings are listed below:



1. As presented in the attached analytical data sheet, the sediment sample contained thirteen (13%) percent solids
2. As shown in the data sheets and listed below are four Tentatively Identified Compounds (TICS) in the water sample:

<u>Compound Name</u>	<u>RT(min.)</u>	<u>Est. Conc.</u>	
		<u>ug/l</u>	
Unknown	3.2	11	J*
Unknown	19.08	16	J*
Unknown	22.04	21	J*
Unknown	24.6	160	J*

(\*J) Estimated Value

3. As shown on the data sheets, compound (CAS No. 117-81-7) bis (2-Ethylhexy) Phthalate was found in both the sample and the blank sample.

If you have any question concerning this report, please contact me 886-6242.

Attachments



E. I. DuPont De Nemours & Company

EAST CHICAGO, IN

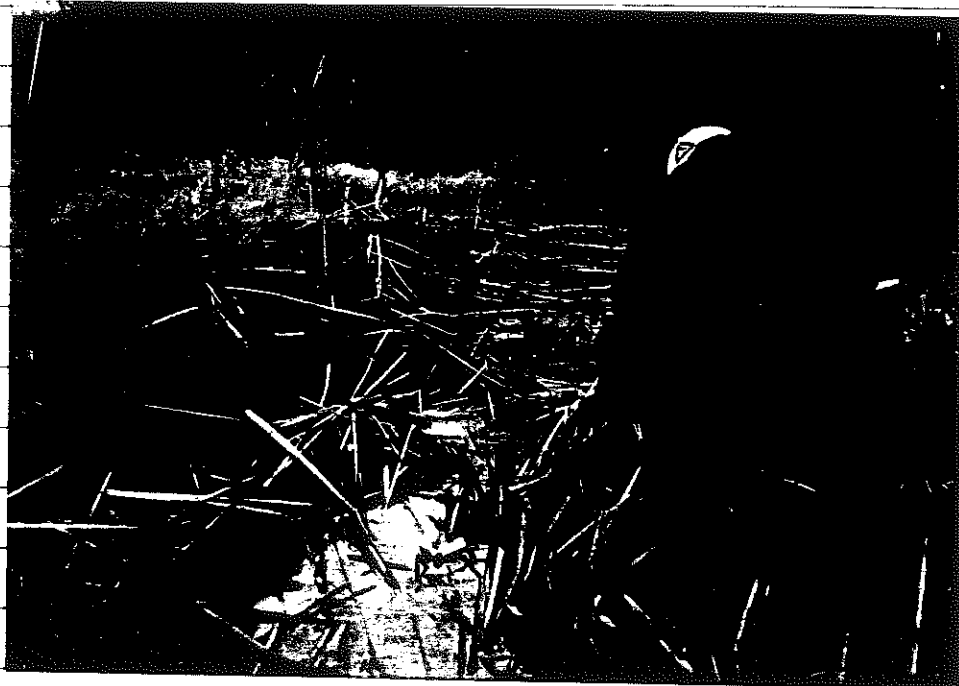


PHOTO #1 - SAMPLING AREA DATE: 12-19-90 12:34PM

ALL PHOTOS WERE TAKEN BY WILLIAM MELVILLE ENV. ENG., USEPA



PHOTO #2 - SAMPLING WERE TAKEN FROM THAT POINT

DATE 12-19-90 12:36PM





E.I. DuPont Denemours & Company

EAST CHICAGO, IND

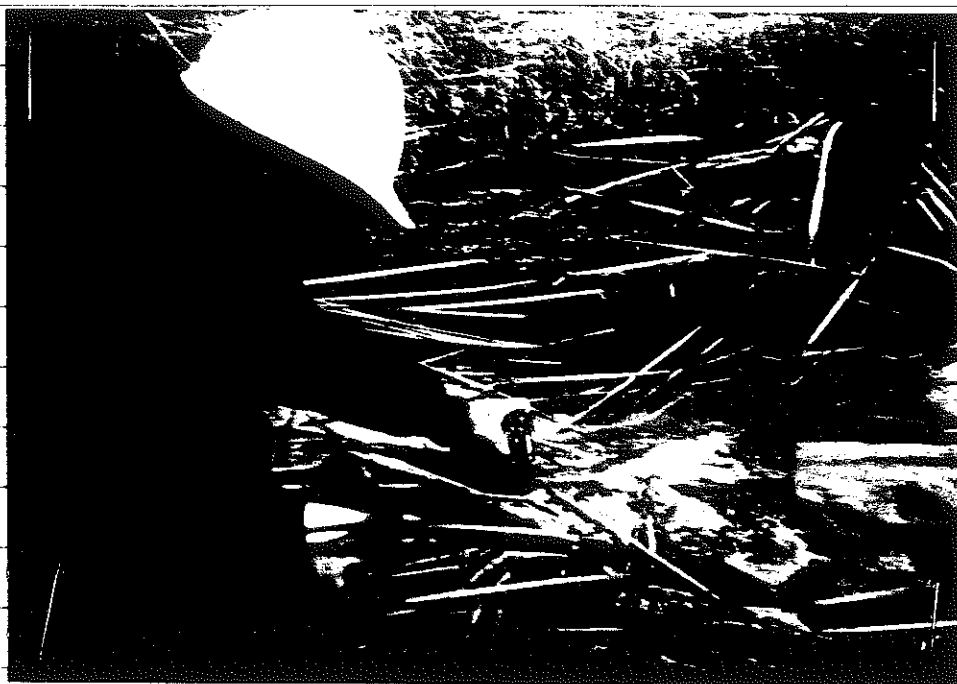


PHOTO #3 - SAMPLING AREA

DATE 12-19-90 12:37 PM



## O f Enforcement

230 South  
Chicago,

orn Street  
60604

## DY RECORD

[illegible]

**Distribution:** White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 05705



J.P. B. 11



UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
CHICAGO, ILLINOIS

DATE: JAN 11 1991  
SUBJECT: Review of Region 5 data for E. I. DUPONT  
FROM: Curtis Ross, Director Chuck E. Ellis  
Region 5 Central Regional Laboratory  
To: Data User:

Attached are the results for:

CRL Data Set Numbers: CDO 7506  
Sample Numbers: 91CDO1801  
Parameter(s): TS  
Laboratory: CRL

Rr Status:  
☒ DATA ACCEPTABLE FOR USE\*  
☐ DATA QUALIFIED AS TO USE  
☐ DATA UNACCEPTABLE FOR USE

\* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

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JAN 11 1991

CENTRAL  
DISTRICT OFFICE

If there are any questions regarding the data, refer them to David Payne, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin  
Data Management Coordinator  
Region 5 Central Regional Laboratory  
(5SCRL)

TRANSMITTED BY

JAN 19 1991

U.S. EPA CENTRAL  
REGIONAL LAB

RECEIVED BY/DATE: \_\_\_\_\_  
Comments:



DI	SITE	DU/ACT.
CUW 7506	E.I. Dupont	AFE

SAMPLES	PARAMETER(S)
9/CD0/50/	7. TS

SAMPLED	RECEIVED	DUE	LAB
12/19/90	12/19/90	1/31/91	CRL

SHIPPED	DATA RECEIVED	CONTRACT
	N/A	

Comments By Reviewer:

☒ REVIEWED      ( ) UNREVIEWED

☒ REVIEWED      ( ) UNREVIEWED

☒ REVIEWED      ( ) UNREVIEWED

PP ~~1/11/91~~

TEAM LEADER/DATE

James M. Adams, Jr. 1/11/91

SECTION CHIEF/DATE

James M. Adams, Jr. 1/11/91

GC COORDINATOR/DATE

REVIEWED BY CONTRACT COORDINATOR/DATE

RECEIVED

1-11-91

TRANSMITTED

1-11-91

DATA MANAGEMENT COORDINATOR

Beffen





ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM MINERALS-NUTRIENTS

DIVISION/BRANCH

CDD

SAMPLING DATE 12/19/90

LAB ARRIVAL DATE 12/19/90

DUE DATE 1/31/91

DU NUMBER

AFE

DATASET NUMBER 7506

STUDY E.I. Dupont

PRIORITY

W

CONTRACTOR

2

CNL LUG  
NUMBER

SAMPLE DESCRIPTION

SEDIMENTS SOLID

SEDIMENTS SOLID

SEDIMENTS SOLID

SEDIMENTS SOLID

SEDIMENTS SOLID

3 TOTAL SOLIDS

3 TOTAL VOLATILE SOLIDS

3 AMMONIA

3 TOTAL NITROGEN

3 TOTAL PHOSPHORUS

2

2 OF DRY WT.

MG L/KG (DRY)

MG N/KG (DRY)

MG P/KG (DRY)

MIN45423

MIN45524

MIN42925

MIN43025

MIN43126

91CDD01

SGL

5-036915

13

1108 / 415-N





UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
CHICAGO, ILLINOIS

DATE: FEB 27 1991

SUBJECT: Review of Region 5 data for E. I. DUPONT, E. CHICAGO-IL  
FROM: Curtis Ross, Director *Chuck & My*  
Region 5 Central Regional Laboratory  
To: Data User:

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Attached are the results for:

CRL Data Set Numbers: CDO 7506  
Sample Numbers: 91CDO1501 & R01  
Parameter(s): ORGANICS - ~~ABN~~ ABNs  
Laboratory: SSCRL-ESD-USEPA

CENTRAL  
DISTRICT OFFICE

Results Status:

- ☒ DATA ACCEPTABLE FOR USE\* for all water data (91CDO1501 & - R01)  
☐ DATA QUALIFIED AS TO USE  
☒ DATA UNACCEPTABLE FOR USE for the sludge data of the sample  
91CDO1501  
\* For data acceptability requirements, refer to the method capability statement  
for the methods referenced.

Comments by the Quality Control Coordinator:

If there are any questions regarding the data, refer them to *James H. Adams*  
~~the Quality Control Coordinator~~ *David A. Payne*,  
the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin  
Data Management Coordinator  
Region 5 Central Regional Laboratory  
(SSCRL)

TRANSMITTED BY

FEB 27 1991

RECEIVED BY/DATE: \_\_\_\_\_

Comments: \_\_\_\_\_



Date : February 23, 1991

To : Files

From : Babu Paruchuri, Chemist *Baby*  
USEPA / ESD / SSCRL

Re : E. I. DuPont - E. Chicago, IL  
Dataset CDO7506 (AFE137:07) - Case Narrative

Two (2) low level water samples (91CD01S01 and -R01) from dataset CDO7506 were submitted for acid base neutral (ABN) analysis by GC/MS utilizing EPA method 625NS.

Since the discharge sample (91CD01S01) contained sludge-type material at the bottom of the sample bottle, the sample was split into two portions and extracted separately by two different techniques (water and soil). The samples were analyzed by GC/MS techniques. The water sample data are acceptable for use; the sludge data are not acceptable for use since the laboratory failed to collect the data by the CRL standard quality assurance protocols.

The site samples were extracted within seven days of collection and analyzed within 40 days of extraction as required by the Clean Water Act regulations ( 40 CFR Part 136 - October 26, 1984).

The samples were analyzed on 1/14/91. The GC/MS instrument met the EPA performance acceptance criteria for DFTPP; the initial calibration curve data of the standards met the EPA acceptance criteria.

The surrogate spike recovery data of the water samples were within the CRL QC acceptance criteria. Since the lab does not implement a sample clean-up procedure, the lab was unable to produce meaningful surrogate recovery data for the sludge, its matrix spike and matrix spike duplicate samples.

91CD01S01 was used for the matrix spike and matrix spike duplicate analysis. The matrix precision and accuracy ( P & A ) data for the sludge sample were not acceptable for use since the extracts were diluted out. The matrix precision data for the water sample were outside the QC acceptance criteria for four out of the 11 compounds and the accuracy data were outside the criteria (i.e., biased high) for five out of the 22 compounds. This does not effect the quality of the data since none of these compounds was detected at the site.

One method blank was extracted with the water samples. No TICs were reported. Bis(2-ethylhexyl)phthalate, considered as a lab contaminant, was detected in the method blank and site samples. Since the laboratory failed to collect method blank data properly for the sludge sample, the sludge sample data should be considered as unacceptable for use.

The site water samples were negative for acid, base and neutral target compounds but TICs were detected in the discharge sample.



The sludge portion of the discharge sample was polluted with several polynuclear aromatic hydrocarbons (PAHs) and non-aromatic hydrocarbons ( e. g., oil). The sludge data should not be used for enforcement related activities for the following reasons:

1. The laboratory failed to properly analyze a soil method blank sample to demonstrate that the glassware, chemicals and other materials employed during the sample extraction and concentration procedures were free from the organic pollutants detected in the sludge sample.
2. Since the lab did not employ a sample extract clean-up procedure, the sludge, its matrix spike and matrix spike duplicate sample extracts had to be diluted to final volumes of 25. to 50. ml. to prevent the sludge sample from blocking the GC/MS auto sampler and resulting in collecting unacceptable GC/MS data. However, the higher dilution of the sludge extracts resulted in producing unusable QC data for matrix P & A study.





## QUALIFIERS

PLEASE SAVE  
THIS INFO  
FOR FUTURE  
USE. THANK YOU

The seven EPA-defined qualifiers to be used are as follows:

- U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330 \text{ U})}{D} \times df \quad \text{where } D = \frac{100 - \% \text{ moisture}}{100}$$

and df = dilution factor

$$\text{at } 24\% \text{ moisture, } D = \frac{100 - 24}{100} = 0.76$$

$$\frac{(330 \text{ U})}{.76} \times 10 = 4300 \text{ U rounded to the appropriate number of significant figures}$$

For soil samples subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

- J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.
- C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides  $\geq 10$  ng/ul in the final extract shall be confirmed by GC/MS.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.



METHODBLANK

Study Name: E. I. DUPONT E. CHICAGO IL AFE5SCRL

Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: METHODBLANK

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: &gt;NF181

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/L
108-95-2	Phenol	2.	U
111-44-4	bis(2-Chloroethyl)Ether	2.	U
95-57-8	2-Chlorophenol	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
100-51-6	Benzyl alcohol	2.	U
95-50-1	1,2-Dichlorobenzene	3.	U
95-48-7	2-Methylphenol	1.	U
39638-32-9	bis(2-chloroisopropyl)ether	3.	U
106-44-5	4-Methylphenol	1.	U
621-64-7	N-Nitroso-Di-n-propylamine	2.	U
67-72-1	Hexachloroethane	2.	U
98-95-3	Nitrobenzene	3.	U
78-59-1	Isophorone	3.	U
88-75-5	2-Nitrophenol	2.	U
105-67-9	2,4-Dimethylphenol	2.	U
65-85-0	Benzoic acid	30.	U
111-91-1	bis(2-Chloroethoxy)methane	3.	U
120-83-2	2,4-Dichlorophenol	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
106-47-8	4-Chloroaniline	2.	U
87-68-3	Hexachlorobutadiene	3.	U
59-50-7	4-Chloro-3-methylphenol	2.	U
91-57-6	2-Methylnaphthalene	2.	U
77-47-4	Hexachlorocyclopentadiene	2.	U
88-06-2	2,4,6-Trichlorophenol	2.	U
95-95-4	2,4,5-Trichlorophenol	2.	U
91-58-7	2-Chloronaphthalene	2.	U
88-74-4	2-Nitroaniline	3.	U
131-11-3	Dimethylphthalate	2.	U
208-96-8	Acenaphthylene	2.	U
606-20-2	2,6-Dinitrotoluene	1.	U



U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.:

Study Name: E. I. DuPONT E. CHICAGO IL AFE5SCL

METHODBLANK

L Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: METHODBLANK

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >NF181

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO. COMPOUND CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

99-09-2-----3-Nitroaniline_____	3.	U
83-32-9-----Acenaphthene_____	2.	U
51-28-5-----2,4-Dinitrophenol_____	15.	U
100-02-7-----4-Nitrophenol_____	2.	U
132-64-9-----Dibenzofuran_____	1.	U
121-14-2-----2,4-Dinitrotoluene_____	1.	U
84-66-2-----Diethylphthalate_____	1.	U
7005-72-3-----4-Chlorophenyl-phenylether_____	1.	U
86-73-7-----Fluorene_____	1.	U
100-01-6-----4-Nitroaniline_____	3.	U
534-52-1-----4,6-Dinitro-2-methylphenol_____	15.	U
86-30-6-----N-Nitrosodiphenylamine (1)_____	2.	U
101-55-3-----4-Bromophenyl-phenylether_____	2.	U
118-74-1-----Hexachlorobenzene_____	2.	U
87-86-5-----Pentachlorophenol_____	2.	U
85-01-8-----Phenanthrene_____	1.	U
120-12-7-----Anthracene_____	3.	U
84-74-2-----Di-n-butylphthalate_____	2.	U
206-44-0-----Fluoranthene_____	2.	U
129-00-0-----Pyrene_____	2.	U
85-68-7-----Butylbenzylphthalate_____	4.	U
56-55-3-----Benzo(a)anthracene_____	2.	U
218-01-9-----Chrysene_____	2.	U
117-81-7-----bis(2-Ethylhexyl)phthalate_____	10.	U
117-84-0-----Di-n-octylphthalate_____	2.	U
205-99-2-----Benzo(b)fluoranthene_____	2.	U
207-08-9-----Benzo(k)fluoranthene_____	2.	U
50-32-8-----Benzo(a)pyrene_____	2.	U
193-39-5-----Indeno(1,2,3-cd)pyrene_____	4.	U
53-70-3-----Dibenzo(a,h)anthracene_____	3.	U
191-24-2-----Benzo(g,h,i)perylene_____	4.	U

(1) - Cannot be separated from Diphenylamine  
TENTATIVELY IDENTIFIED COMPOUNDS YES[ ] NO[X]



91CD01S01

Study Name: E. I. DuPONT E. CHICAGO IL AFE5SCRL

Lab Code: CHICAGOIL Case No.: CD07506 SAS No.: E1DUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: 91CD01S01

Sample wt/vol: 960 (g/mL) ML

Lab File ID: &gt;NF182

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO.

COMPOUND

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

Q

108-95-2-----	Phenol	2.	U
111-44-4-----	bis(2-Chloroethyl)Ether	2.	U
95-57-8-----	2-Chlorophenol	2.	U
541-73-1-----	1,3-Dichlorobenzene	2.	U
106-46-7-----	1,4-Dichlorobenzene	2.	U
100-51-6-----	Benzyl alcohol	2.	U
95-50-1-----	1,2-Dichlorobenzene	3.	U
95-48-7-----	2-Methylphenol	1.	U
59638-32-9-----	bis(2-chloroisopropyl)ether	3.	U
106-44-5-----	4-Methylphenol	1.	U
621-64-7-----	N-Nitroso-Di-n-propylamine	2.	U
67-72-1-----	Hexachloroethane	2.	U
98-95-5-----	Nitrobenzene	3.	U
78-59-1-----	Isophorone	3.	U
88-75-5-----	2-Nitrophenol	2.	U
105-67-9-----	2,4-Dimethylphenol	2.	U
65-85-0-----	Benzoic acid	31.	U
111-91-1-----	bis(2-Chloroethoxy)methane	3.	U
120-83-2-----	2,4-Dichlorophenol	2.	U
120-82-1-----	1,2,4-Trichlorobenzene	2.	U
91-20-3-----	Naphthalene	2.	U
106-47-8-----	4-Chloroaniline	2.	U
87-68-3-----	Hexachlorobutadiene	3.	U
59-50-7-----	4-Chloro-3-methylphenol	2.	U
91-57-6-----	2-Methylnaphthalene	2.	U
77-47-4-----	Hexachlorocyclopentadiene	2.	U
88-06-2-----	2,4,6-Trichlorophenol	2.	U
95-95-4-----	2,4,5-Trichlorophenol	2.	U
91-58-7-----	2-Chloronaphthalene	2.	U
88-74-4-----	2-Nitroaniline	3.	U
131-11-3-----	Dimethylphthalate	2.	U
208-96-8-----	Acenaphthylene	2.	U
606-20-2-----	2,6-Dinitrotoluene	1.	U





U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91CD01501

Study Name: E. I. DUPONT E. CHICAGO IL AFE55CRL

Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: 91CD01501

Sample wt/vol: 960 (g/mL) ML

Lab File ID: >NF182

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO. COMPOUND CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

99-09-2	3-Nitroaniline	3.	U
83-32-9	Acenaphthene	2.	U
51-28-5	2,4-Dinitrophenol	16.	U
100-02-7	4-Nitrophenol	2.	U
132-64-9	Dibenzofuran	1.	U
121-14-2	2,4-Dinitrotoluene	1.	U
84-68-2	Diethylphthalate	1.	U
7005-72-3	4-Chlorophenyl-phenylether	1.	U
86-73-7	Fluorene	1.	U
100-01-6	4-Nitroaniline	3.	U
534-52-1	4,6-Dinitro-2-methylphenol	16.	U
86-30-6	N-Nitrosodiphenylamine (1)	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U
118-74-1	Hexachlorobenzene	2.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	1.	U
120-12-7	Anthracene	3.	U
84-74-2	Di-n-butylphthalate	2.	U
206-44-0	Fluoranthene	2.	U
129-00-0	Pyrene	2.	U
85-68-7	Butylbenzylphthalate	4.	U
56-55-3	Benzo(a)anthracene	2.	U
218-01-9	Chrysene	2.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.	B
117-84-0	Di-n-octylphthalate	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U
207-08-9	Benzo(k)fluoranthene	2.	U
50-32-8	Benzo(a)pyrene	2.	U
193-39-5	Indeno(1,2,3-cd)pyrene	4.	U
53-70-3	Dibenzo(a,h)anthracene	3.	U
191-24-2	Benzo(g,h,i)perylene	4.	U

(1) - Cannot be separated from Diphenylamine  
TENTATIVELY IDENTIFIED COMPOUNDS YES[✓] NO[ ]



U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91CD01S01

Study Name: E. I. DuPONT E. CHICAGO IL A 55CRL

Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: 91CD01S01

Sample wt/vol: 960 (g/mL) ML

Lab File ID: >NF182

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

Number TICs found: 4

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.20	11.	J
2.	Unknown	19.08	16.	J
3.	Unknown	22.04	21.	J
4.	Unknown	24.60	160.	J
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U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Sample Name: E. I. DuPONT E. CHICAGO IL AFE55CRL

91CD01R01

Lab Code: CHICAGOIL Case No.: CDO7506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: 91CD01R01

Sample wt/vol: 1050 (g/mL) ML

Lab File ID: >NF183

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	2.	U
111-44-4	bis(2-Chloroethyl)Ether	1.	U
95-57-8	2-Chlorophenol	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
100-51-6	Benzyl alcohol	2.	U
95-50-1	1,2-Dichlorobenzene	2.	U
95-48-7	2-Methylphenol	1.	U
39638-32-9	bis(2-chloroisopropyl)ether	2.	U
106-44-5	4-Methylphenol	1.	U
621-64-7	N-Nitroso-Di-n-propylamine	1.	U
67-72-1	Hexachloroethane	2.	U
98-95-3	Nitrobenzene	2.	U
78-59-1	Isophorone	2.	U
88-75-5	2-Nitrophenol	2.	U
105-67-9	2,4-Dimethylphenol	2.	U
65-85-0	Benzoic acid	29.	U
111-91-1	bis(2-Chloroethoxy)methane	2.	U
120-83-2	2,4-Dichlorophenol	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
106-47-8	4-Chloroaniline	2.	U
87-68-3	Hexachlorobutadiene	2.	U
59-50-7	4-Chloro-3-methylphenol	1.	U
91-57-6	2-Methylnaphthalene	2.	U
77-47-4	Hexachlorocyclopentadiene	2.	U
88-06-2	2,4,6-Trichlorophenol	1.	U
95-95-4	2,4,5-Trichlorophenol	1.	U
91-58-7	2-Chloronaphthalene	1.	U
68-74-4	2-Nitroaniline	2.	U
131-11-3	Dimethylphthalate	1.	U
208-96-8	Acenaphthylene	1.	U
606-20-2	2,6-Dinitrotoluene	1.	U



U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91CD01R01

Sample Name: E. I. DuPONT E. CHICAGO IL AFE5SCRL

Lab Code: CHICAGOIL Case No.: CDO7506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) WATER

Lab Sample ID: 91CD01R01

Sample wt/vol: 1050 (g/mL) ML

Lab File ID: >NF183

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	2.	U
83-32-9	Acenaphthene	1.	U
51-28-5	2,4-Dinitrophenol	14.	U
100-02-7	4-Nitrophenol	1.	U
132-64-9	Dibenzofuran	1.	U
121-14-2	2,4-Dinitrotoluene	1.	U
84-66-2	Diethylphthalate	1.	U
7005-72-3	4-Chlorophenyl-phenylether	1.	U
86-73-7	Fluorene	1.	U
100-01-6	4-Nitroaniline	3.	U
534-52-1	4,6-Dinitro-2-methylphenol	14.	U
86-30-6	N-Nitrosodiphenylamine (1)	1.	U
101-55-3	4-Bromophenyl-phenylether	1.	U
118-74-1	Hexachlorobenzene	1.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	1.	U
120-12-7	Anthracene	2.	U
84-74-2	Di-n-butylphthalate	2.	U
206-44-0	Fluoranthene	1.	U
129-00-0	Pyrene	1.	U
85-68-7	Butylbenzylphthalate	3.	U
56-55-3	Benzo(a)anthracene	1.	U
218-01-9	Chrysene	1.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.	B
117-84-0	Di-n-octylphthalate	1.	U
205-99-2	Benzo(b)fluoranthene	1.	U
207-08-9	Benzo(k)fluoranthene	1.	U
50-32-8	Benzo(a)pyrene	2.	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.	U
53-70-3	Dibenzo(a,h)anthracene	2.	U
191-24-2	Benzo(g,h,i)perylene	4.	U

(1) - Cannot be separated from Diphenylamine  
TENTATIVELY IDENTIFIED COMPOUNDS YES[ ] NO[X]





U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91CD01S01

Study Name: E. I. DUPONT E. CHICAGO IL AFE5SCL

Lab Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) SOIL

Lab Sample ID: 91CD01S01

Sample wt/vol: 30.06 (g/mL) G

Lab File ID: >NF193

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/15/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

108-95-2	Phenol	6300.	J D
111-44-4	bis(2-Chloroethyl)Ether	60000.	U D
95-57-8	2-Chlorophenol	60000.	U D
541-75-1	1,3-Dichlorobenzene	60000.	U D
106-46-7	1,4-Dichlorobenzene	60000.	U D
100-51-6	Benzyl alcohol	60000.	U D
95-50-1	1,2-Dichlorobenzene	60000.	U D
95-48-7	2-Methylphenol	60000.	U D
39638-32-9	bis(2-chloroisopropyl)ether	60000.	U D
106-44-5	4-Methylphenol	60000.	U D
621-64-7	N-Nitroso-Di-n-propylamine	60000.	U D
67-72-1	Hexachloroethane	60000.	U D
98-95-3	Nitrobenzene	60000.	U D
78-59-1	Isophorone	60000.	U D
88-75-5	2-Nitrophenol	60000.	U D
105-67-9	2,4-Dimethylphenol	60000.	U D
65-85-0	Benzoic acid	300000.	U D
111-91-1	bis(2-Chloroethoxy)methane	60000.	U D
120-85-2	2,4-Dichlorophenol	60000.	U D
120-82-1	1,2,4-Trichlorobenzene	60000.	U D
91-20-3	Naphthalene	60000.	U D
106-47-8	4-Chloroaniline	60000.	U D
67-68-3	Hexachlorobutadiene	60000.	U D
59-50-7	4-Chloro-3-methylphenol	60000.	U D
91-57-6	2-Methylnaphthalene	60000.	U D
77-47-4	Hexachlorocyclopentadiene	60000.	U D
88-06-2	2,4,6-Trichlorophenol	60000.	U D
95-95-4	2,4,5-Trichlorophenol	300000.	U D
91-58-7	2-Chloronaphthalene	60000.	U D
88-74-4	2-Nitroaniline	300000.	U D
131-11-3	Dimethylphthalate	60000.	U D
208-96-8	Acenaphthylene	60000.	U D
606-20-2	2,6-Dinitrotoluene	60000.	U D



U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91CD01S01

Study Name: E. I. DuPONT E. CHICAGO IL AFE55CRL

Lab Code: CHICAGOIL Case No.: CD07506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) SOIL Lab Sample ID: 91CD01S01

Sample wt/vol: 30.06 (g/mL) G Lab File ID: >NF193

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_ dec. \_\_\_\_ Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 1/15/91

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2-----	3-Nitroaniline_____	300000.	U D
83-32-9-----	Acenaphthene_____	2400.	J D
51-28-5-----	2,4-Dinitrophenol_____	300000.	U D
100-02-7-----	4-Nitrophenol_____	300000.	U D
132-64-9-----	Dibenzofuran_____	60000.	U D
121-14-2-----	2,4-Dinitrotoluene_____	60000.	U D
84-66-2-----	Diethylphthalate_____	60000.	U D
7005-72-3-----	4-Chlorophenyl-phenylether____	60000.	U D
86-73-7-----	Fluorene_____	60000.	U D
100-01-6-----	4-Nitroaniline_____	300000.	U D
534-52-1-----	4,6-Dinitro-2-methylphenol____	300000.	U D
86-50-6-----	N-Nitrosodiphenylamine (1)____	60000.	U D
101-55-3-----	4-Bromophenyl-phenylether____	60000.	U D
118-74-1-----	Hexachlorobenzene_____	60000.	U D
87-86-5-----	Pentachlorophenol_____	300000.	U D
85-01-8-----	Phenanthrene_____	12000.	J D
120-12-7-----	Anthracene_____	60000.	U D
84-74-2-----	Di-n-butylphthalate_____	60000.	U D
206-44-0-----	Fluoranthene_____	30000.	J D
129-00-0-----	Pyrene_____	33000.	J D
85-68-7-----	Butylbenzylphthalate_____	60000.	U D
56-55-3-----	Benzo(a)anthracene_____	14000.	J D
218-01-9-----	Chrysene_____	20000.	J D
117-81-7-----	bis(2-Ethylhexyl)phthalate____	93000.	BD
117-84-0-----	Di-n-octylphthalate_____	60000.	U D
205-99-2-----	Benzo(b)fluoranthene_____	60000.	U D
207-08-9-----	Benzo(k)fluoranthene_____	60000.	U D
50-52-8-----	Benzo(a)pyrene_____	60000.	U D
193-39-5-----	Indeno(1,2,3-cd)pyrene_____	60000.	U D
53-70-3-----	Dibenzo(a,h)anthracene_____	60000.	U D
191-24-2-----	Benzo(g,h,i)perylene_____	60000.	U D

(1) - Cannot be separated from Diphenylamine  
TENTATIVELY IDENTIFIED COMPOUNDS YES[X] NO[ ]



U.S. EPA - REGION V  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91CD01S01

Study Name: E. I. DuPONT E. CHICAGO IL A SSCRL

Lab Code: CHICAGOIL Case No.: CDO7506 SAS No.: EIDUPN SDG No.: AFE104

Matrix: (soil/water) SOIL

Lab Sample ID: 91CD01S01

Sample wt/vol: 30.06 (g/mL) g

Lab File ID: >NF193

Level: (low/med) LOW

Date Received: 12/19/90

% Moisture: not dec. \_\_\_\_\_ dec. \_\_\_\_\_

Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) SEPF

Date Analyzed: 1/14/91

GPC Cleanup: (Y/N) N pH: NA

Dilution Factor: 1.00000

Number TICs found: 4

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	2.56	37000.	J
57103	Hexanoic acid (9CI)	19.89	100000.	J
10544500	Sulfur, mol. (S8)	20.66	280000.	J
4.	Total hydrocarbons		800000.	J
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E.I. DuPont De Nemours & Co., Inc.  
5215 Kennedy Avenue  
East Chicago, Indiana 46312  
NPDES Permit No. IN0000329

Jim Novak 6-0177  
Joe Malek 3-2007  
~~Kenning 6-6831~~  
Jim Filippini 6-6743  
Bill Tong

CHRONOLOGY

- 12/19/90 USEPA and IDEM investigators (names?) sample discharge of water from DuPont's property that flows into the Grand Calumet river, a navigable water of the U.S.
- 2/13/91 EPA Region 5 Water Div. issues a § 308 Request to DuPont, Docket No. V-W-91-308-11 regarding a "wastestream" (point source discharge of pollutants) into the Grand Cal. River. EPA requested Control Plan(s), discharge reports, and a 1-time monitoring program and a monthly monitoring program for priority pollutants, 40 CFR 423, App. A, 1-13.
- 2/15/91 DuPont receives the § 308 Request.
- 2/21/91 DuPont's in-house attorney, Norman D. Griffiths, corresponds w/ Water Div and acknowledges receipt of the § 308 and DuPont's intent to comply, to the extent practicable and subject to limitations. DuPont "upgrades" word usage to describe "wastestream" as a "groundwater seep" [actually, a discharge of pollutants from a point source into waters of the U.S.]. DuPont claims that the discharge is a result of a southerly flow of groundwater to the river. Further, DuPont will not sample and monitor because it claims it has eliminated the seep [discharge of pollutants].
- 3/11/91 Du Pont's attorney requests an extension of time to respond to the § 308 request, until 3/15/91. James Filippini, W. Div agrees.
- 3/14/91 DuPont responds further to 2/13/91 § 308 request.
- 3/18/91 EPA letter to Du Pont confirming that all future correspondence will be directed to Mr. Griffiths, Du Pont's counsel. Attached was the corrected page 6 of the § 308 request.
- 3/20/91 Telefax from Jim Novak, W. Div., to OJ Meyer, Du Pont's E.C. Environmental Coordinator, allowing the substitution of a "weekly composite sample" for an "8-hour flow proportioned composite sample" as specified in ¶ 3.A.2 on page 4 of the § 308 request; (2) allowing the substitution of "dissolved metals" for "total metals" as specified in ¶ 3.A.2 on page 5 of the § 308, re: the initiation of the monthly monitoring program only.
- 3/21/91 Telefax from EPA's Novak to DuPont's Meyer clarifying the monitoring sample requirement of the § 308, ¶ 3.A.2, p. 4: substitute "weekly samples consisting of 3 grab samples over an 8-hour period" for the "weekly composite sample."
- 4/91 Letter from DuPont legal counsel, to Joe Malek, Region 5 RPU, re: recent phone calls by Malek who was seeking voluntary data





submittals from DuPont. Du Pont voluntarily submitted a site map, with plant boundaries and title conveyances to the facility; Du Pont's 1990 annual report listing the internal organization of the Co.; a copy of the Spill Control and Reporting section of the facility's Site Emergency Response Plan. Du Pont denied Malek's request for a phone directory of plant employees claiming its beyond the scope of CERCLA authority. Du Pont requested that EPA give prior notice before interviewing any of its employees. DuPont agrees to cooperate so long as the EPA is not trying "to build a case of liability against" it.

- 4/10/91 Joe Malek, RPU, memo to Lynn Peterson et al. re: Multi-media collection "initiative" for the duPont facility in East Chicago, IN. Malek "initiated" a discussion w/ DuPont and its legal counsel re: the voluntary submission of data for "any program ... for [EPA] purposes."
- 4/16/91 DuPont submits its 1-time and its monthly monitoring reports pursuant to § 308 request. DuPont advises that two additional seeps [discharges of pollutants] have been discovered. The report was prepared by CH2MHill.
- 4/17/91 Memo from Jerri-Anne Garl, Chief, Groundwater Protection Branch, to Dale Bryson, Director, Water Division, re: proposal to combine CWA § 308 and CERCLA § 104 information requests in one letter to DuPont. Did Bryson respond? Does Garl know that W. Div. has already sent out its § 308.?
- 4/29/91 DuPont telefaxes 3 maps locating the "seeps" and surface water sampling locations.
- 4/30/91 EPA's Novak memo to file. The memo discusses meeting w/ DuPont; coordination w/ Cody Fleece from IDEM; recommendation to meet w/ DuPont.
- 5/14/91 DuPont submits its April Monthly Monitoring report re: the discharges to the Grand Cal.
- 6/27/91 Water Div. amends the previously issued § 308 request. Because two additional discharges ["seeps"] have been discovered DuPont is required to provide the same monitoring programs required for the first seep; the composite grab sampling requirement was substituted by single grab samples; eliminated the requirement to analyze the following parameters for the first "seep" only: BOD<sub>5</sub>, Oil and Grease, and Copper.

(voluntary) phase II gw. m. rpt. (in draft - not final)





## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

April 3, 1990

105 South Meridian Street  
P.O. Box 6015  
Indianapolis 46206-6015  
Telephone 317/232-8603

Mr. O. J. Meyers, Senior Supervisor  
Safety, Health and Environment  
E. I. du Pont de Nemours and Company  
5215 Kennedy Avenue  
East Chicago, Indiana 46312

Dear Mr. Meyers:

COMPLIANCE SECTION

Enclosed is a copy of the Compliance Sampling Inspection-Toxics Report dated February 14, 1990, conducted by representatives of the U.S. EPA. Your facility was rated satisfactory in all applicable areas except Records/Reports and Laboratory Practices. Please respond to this office within thirty (30) days with a discussion of actions to be taken to correct the noted deficiencies.

If you have any questions regarding this matter, please contact Ms. Carla Miller at AC 317/232-8409.

Sincerely,

*Paul Cluxton*

Paul Cluxton, Acting Chief  
Enforcement Section  
Office of Water Management

CJM/cm  
Enclosure

cc: Michael Mikulka, U.S. EPA (w/o enclosure)  
Steve Boswell (with enclosure)



**PROGRAM 1\***  
**ANALYTICAL TESTING**

**FACILITY-WIDE MONITORING**

<b>Two sampling rounds at:</b> 13 MWs and 3 surface water sites plus 4 QA/QC samples	<b>Quantity</b>
<b>Constituents**:</b>	
Field Parameters (Temperature, Specific Conductance, pH)	40
Major Ions (Ca, Mg, K, Na, HCO <sub>3</sub> , SO <sub>4</sub> , Cl)	40
Conventional Pollutants (COD, TDS, SO <sub>4</sub> , Phosphates, Total Kjeldahl & Ammonia Nitrogen, CN)	40
Inorganics (Al, As, Ba, Bo, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Sb, Zn, F)	40
EPA TCL Constituents (A/B/Ns, VOCs)	40

**SELECTED WMU-SPECIFIC MONITORING**

<b>Two sampling rounds</b> 3 MWs plus 1 QA/QC sample	<b>Quantity</b>
<b>Constituents**:</b>	
Field Parameters (Temperature, Specific Conductance, pH)	3
Selected Target Compounds	
WMU 2 (Cl, SO <sub>4</sub> , Phosphates, Fe, As, Zn, VOCs, PCB)	1 2
WMU 24 (Cl, Al, Total Kjeldahl & Ammonia N, Ba, Zn, Fe)	2 4
Blank (for all constituents listed above)	1 2

**\*\* Selection based on contents of WMU and constituents detected  
in sanitary sewer infiltration or existing MW**

**QA/QC samples (included above):**  
One duplicate and one blank per every 10 field samples

**Filename: 2anal.wk1**





E. I. DU PONT DE NEMOURS & COMPANY  
INCORPORATED

EAST CHICAGO, INDIANA 46312

CHEMICALS AND PIGMENTS DEPARTMENT

cc: E. F. Hartstein, C&P, E. Chgo.  
N. Bell, B-12252-A, Wilm.  
P. Meitner, Legl, D7015-A, Wilm.  
→ R. D. Tolpa, USEPA, Region V  
A. E. Kahn, ECAQB

April 12, 1990

Carla Miller  
Enforcement Section, IDEM  
105 S. Meridian Street  
P. O. Box 7060  
Indianapolis, Indiana 46206-7060

COMPLIANCE SECTION

Dear Ms. Miller:

DuPont would like to proceed with Phase II of our voluntary Groundwater Assessment Program. The program will be that as presented to the IDEM Staff during our meeting in Indianapolis on March 5, 1990, and presented at the Public Meeting held in East Chicago on March 28, 1990.

The Major elements of this program include:

- Installation of 12 perimeter sampling wells \*
- Collection of two sets of samples
- Analysis of samples \*\*
- Data validation and evaluation
- Additional groundwater hydrology evaluation
- Estimation of groundwater loading
- Estimate loading to the river
- Preparation of final report

We will begin this voluntary program May 1, 1990. If IDEM has any comment or concern about this course of action we expect to hear from IDEM before that date.

  
O. J. Meyer  
Environmental Coordinator

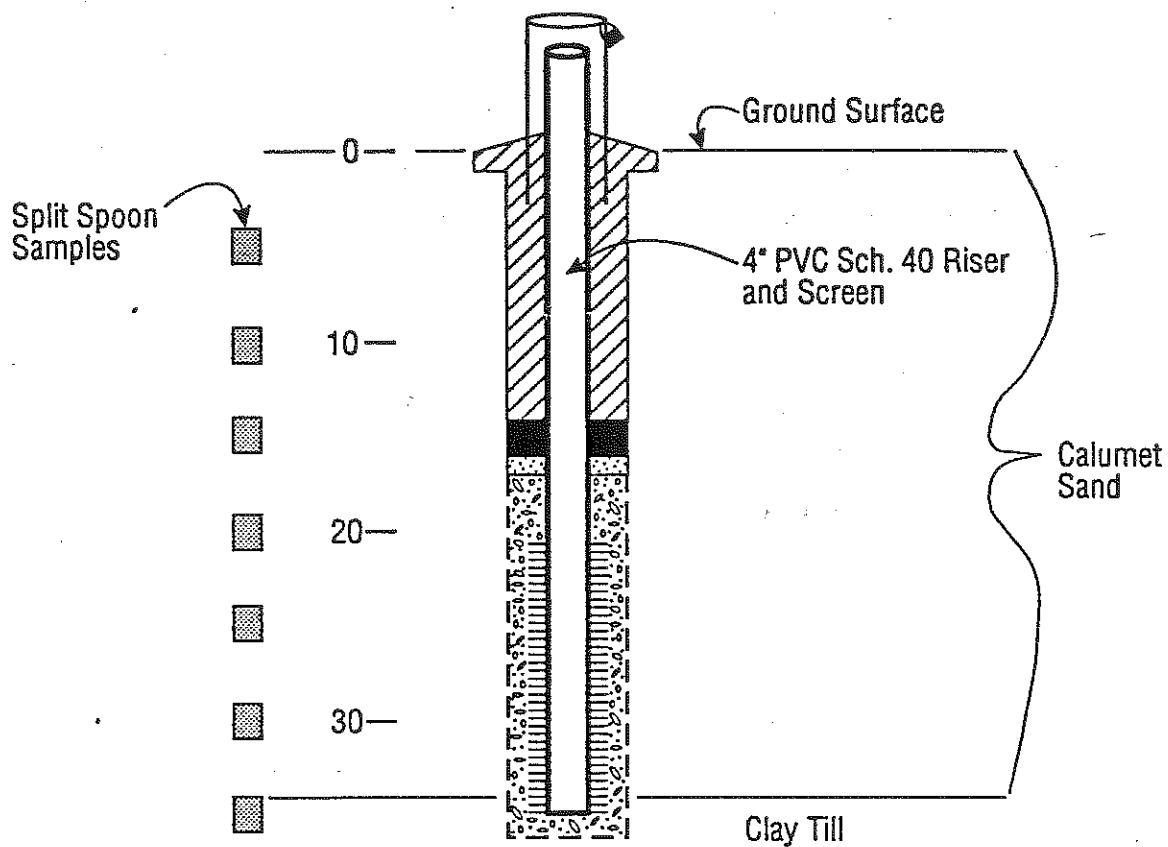
\* A diagram of a typical well is attached

\*\* Analyses to be run are attached

OJM/pjp







**Note**

Protective System includes  
3 Protective Posts.

**TYPICAL MONITORING  
WELL CONSTRUCTION**





JUL 14 1982



E. I. DU PONT DE NEMOURS & COMPANY  
INCORPORATED  
EAST CHICAGO, INDIANA 46312

CHEMICALS AND PIGMENTS DEPARTMENT

July 13, 1982

Ecology and Environment, Inc.  
223 Jackson Blvd.  
Chicago, IL 60606

Attn: Ellen Jurczak

Dear Ms. Jurczak:

We received your letter of June 7 requesting permission for your company to install and sample four groundwater monitoring wells on our Du Pont East Chicago, Indiana plant. As discussed with you by phone, we need more specific information on the program, and I hope that additional details are available to you now.

First, there are the practical aspects of job scope which we need to understand in order to plan for safety orientation and escort of your personnel and to make arrangements for any necessary follow-up services which we must provide. Because the Du Pont East Chicago plant is a small chemical manufacturing operation staffed with a minimum force, we must plan and schedule extra activities carefully. Specific questions follow:

- On what dates and for what time periods do you propose to visit the plant?
- What activity is planned for each visit?
- How many of your people will be involved in each visit?
- Are any agency permits required? If so, what is your program for obtaining them?
- Will Ecology and Environment, Inc., be responsible for all job costs?
- Will there be any need for your personnel to visit plant areas other than the four well locations?
- When will the wells be removed and the work sites restored to their original conditions?



Ellen Jurczak  
July 13, 1982  
Page two

Second, there is the technical aspect of your plans, highly important to us from the standpoint of assuring the quality, accuracy and validity of data obtained for our site. We would appreciate detailed information sufficiently in advance of the physical work for our review and comment. Specific information needs follow:

- What is the design of the proposed wells and what materials of construction will be used?
- What procedures are specified for drilling, sealing, flushing, and closure of the monitoring wells?
- What number of samples will be taken and for what characteristics will they be analyzed?
- What are the procedural details for the collection and identification of samples and for their control prior to analyses?
- What analytical methods will be used?
- What quality assurance program is specified for the control of analytical procedures?
- What laboratory will run the sample analyses? Is the laboratory EPA approved?

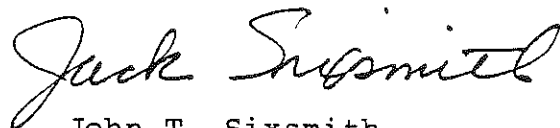
Finally, we wish to understand the overall study plans and objectives and the degree your proposed program will include the municipality and other industry in our immediate locality. As we have pointed out to the EPA previously, we believe that any meaningful groundwater monitoring study must be done on an area-wide basis rather than an individual plant basis since there is such a concentration of heavy industry in this region. To gain insight in this matter, we request that you share with us a copy of the EPA contract under which your monitoring study will be done and also a copy of the scope of work for all activity programmed to take place in East Chicago, Gary, and Hammond.



Ellen Jurczak  
July 13, 1982  
Page 3

We would appreciate your reply to our questions. Please do not hesitate to call me should you need additional information.

Yours truly,

A handwritten signature in cursive script that reads "Jack Sixsmith".

John T. Sixsmith  
Environmental Control  
Coordinator

JTS:ckg

cc: Jim Knoy  
Indiana State Board of Health  
1330 West Michigan Street  
Indianapolis, Indiana 46206





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V

DATE: DEC 14 1981

SUBJECT: Final Determination - E.I. Du Pont  
East Chicago, Indiana

FROM: William E. Muno, Chief  
Engineering Unit I

TO: File

Site Description

E.I. du Pont DeNemours and Company (Du Pont) has operated a chemical plant in East Chicago, Indiana since 1892. The plant is located north of the Grand Calumet River, east of Kennedy Avenue. The area of the site is about 225 acres. Over the years the types of chemicals produced have changed. Currently, the plant produces sodium silicate and sulfamic acid. However, our concern about the plant's waste disposal practices centers around the agricultural chemicals operation and disposal of spent catalysts, both of which have been discontinued. U.S. EPA first became aware of this site through the Eckhardt list.

Initial Investigation

As a followup to the Eckhardt site list, U.S. EPA sent a CWA 308/RCRA 8003 information request to Du Pont on March 21, 1980. A Preliminary Assessment was completed on April 30, 1980, by the Air & Hazardous Materials Division (AHMD); the degree of seriousness was listed as unknown based on a lack of information.

308 Response

Du Pont submitted a very complete response to our 308 request on April 29, 1980. We requested AHMD to evaluate Du Pont's response; their evaluation was dated July 2, 1980. The evaluation expressed a concern over possible groundwater contamination from the following chemicals which at one time or another were produced or used at this plant:

Vanadium pentoxide  
Antimony pentachloride  
Calcium arsenate  
Lead arsenate  
Dichlorobenzene (degradation product of linuron)  
Ammonium sulfamate  
Sodium hydroxide  
Calcium Hydroxide

A concern was also raised about the airborne emissions from several of the above compounds. The evaluation concluded with the following recommendations:

1. Du Pont should be requested to perform a groundwater study;
2. Process description and production information for the above chemical compounds should be requested; and
3. Clarification of certain items in the 308 response should be requested.



### 308 Followup

On August 28, 1980, U.S. EPA sent a letter to Du Pont which covered the three recommendations given above. Du Pont called me on September 29, 1980, and requested that because of the complexity of our letter, they would like to have a meeting at the plant to discuss exactly what type of information we were seeking. Because of vacations and other scheduling conflicts, the meeting was not held until November 12, 1980. At this meeting the questions which we had on the 308 response were clarified. "Waste piles" as used in the response do not exist; most the old disposal areas are level. Thus, the air pollution problem is minimal. A considerable amount of time was spent discussing the pros and cons of a groundwater study. Du Pont took the position that since no problem had been actually identified, they should not be required to do a groundwater study. We asked Du Pont to reconsider this decision and submit its final decision to us in writing; they agreed to this request.

After receipt of the 308 response, FIT was asked to review generalized hydrogeological information for northwest Indiana and comment on the potential for groundwater contamination. The FIT report, dated December 16, 1980, states: "In conclusion, the East Chicago Du Pont plant is located in an area where there is an extremely high potential for groundwater contamination."

In a letter of January 22, 1981, Du Pont stated that it did not believe a groundwater study was warranted for the following reasons:

1. There is no reason why the Du Pont plant should be singled out from all the other plants in the area;
2. The Du Pont plant is only a small part of the larger northwest Indiana industrial complex; and
3. The hydrology and geology of the area would make such a study both difficult and costly.

As a counterproposal, Du Pont suggested that U.S. EPA should attempt to coordinate a regional groundwater study which should involve all industrial and municipal sites in the area.

### Sediment Sampling

Although I did not agree with Du Pont's reasons for not conducting a groundwater study, I felt that before we insist that they conduct a study, or if we would proceed to conduct our own study, we should have some evidence that a problem does exist. Certainly, this would be necessary if we had to prepare a justification for a RCRA 3013 order. Since the plant borders the Grand Calumet River, I decided to conduct a sediment survey of the river to look for the metals which were characteristic of the wastes Du Pont buried. The survey was requested on April 30, 1981. Samples were collected on July 16, 1981, and the results are contained in a November 3, 1981, report. The results of the survey are given in Attachment I. Two metals, vanadium and arsenic, were not detected. The other three metals, lead, zinc, and arsenic, did not show any significant increase from the upstream to the downstream stations.



### Other Information

On December 9, 1980, AHMD conducted a RCRA ISS inspection at this site. On December 22, 1980, U.S. EPA informed Du Pont that it was found to be in compliance with the RCRA regulations.

On December 4, 1980, upstream and downstream sediment samples were collected as part of a much larger river survey. The results are given in Attachment II. This data is somewhat inconclusive. Two parameters (lead and arsenic) showed a slight increase; two other parameters (vanadium and zinc) showed a slight decrease. Another somewhat confusing point is that the 1980 data is approximately an order of magnitude larger than the 1981 data. I tend to favor the 1981 data as both the duplicate and blank samples indicated the absence of any analytical problems.

As part of another investigation, U.S. EPA had Dr. Kenneth J. Brock do a literature review of the hydrogeology of northwest Indiana. Rosenshein and Hunn (1968) prepared a piezometric surface map for northwest Indiana. The map shows a northward sloping water table from a drainage divide (located north of and parallel to the Little Calumet River) to Lake Michigan. Dr. Brock substantiated this conclusion with current data from USGS monitoring wells.

### Final Determination

Based on the following reasons, I recommend that no additional U.S. EPA action be taken regarding Du Pont's East Chicago, Indiana plant:

1. The disposal of the materials of concern has long since been discontinued;
2. Monitoring of the Grand Calumet River in the vicinity of the plant site does not indicate any significant net increase of the materials of concern;
3. Groundwater flow is most likely to the north away from the Grand Calumet River;
4. The area north of the plant site receives its drinking water from Lake Michigan via the East Chicago municipal system;
5. If the plant was causing any groundwater contamination, there would be little or no public health or environmental consequences since the groundwater is generally not used; and
6. There is no other evidence to indicate the presence of a groundwater problem in the vicinity of the plant site.

### Attachments

cc: Fenner/Miner  
Frumm  
Shandross, AHMD



ATTACHMENT II

Grand Calumet River  
Sediment Data

December 4, 1980

<u>Location</u>	<u>ppm</u>			
	<u>Lead</u>	<u>Vanadium</u>	<u>Zinc</u>	<u>Arsenic</u>
Upstream (Cline Ave.)	350	25	2200	21
Downstream (Kennedy Ave.)	520	15	1400	27





ATTACHMENT I

Grand Calumet River  
Sediment Data

July 16, 1981

<u>Location</u>	<u>mg/kg (ppm)</u>				
	<u>Lead</u>	<u>Vanadium</u>	<u>Zinc</u>	<u>Arsenic</u>	<u>Antimony</u>
Upstream (Cline Ave.)	110	ND	550	1.9	ND
Du Pont Intake	40	ND	320	ND	ND
Top of Bend	64	ND	800	1.4	ND
Midpont *	104	ND	975	2.4	ND
Downstream (Kennedy Ave.)	62	ND	550	2.2	ND

\*Reported value is the average of a duplicate sample collected at this location.



CERCLA  
II B

AUG 2 1980

AUG 28 1980

Mr. J.T. Sixsmith  
Environmental Control Coordinator  
E.I. duPont de Nemours & Company  
5215 Kennedy Avenue  
East Chicago, Indiana 46312

Dear Mr. Sixsmith:

Thank you for your reply to the United States Environmental Protection Agency (U.S. EPA) Information Request of March 21, 1980. U.S. EPA has fully reviewed the information provided in response to the request and has identified certain areas of concern which require further assessment. The following is a discussion of these areas of concern and the additional information needed in order to fully assess the hazards associated with on-site disposal at the E.I. duPont East Chicago Plant.

Groundwater Contamination: U.S. EPA believes that the disposal practices at the E.I. duPont Plant may be a source of groundwater contamination. A study is needed to determine if the groundwater is contaminated and the extent of that contamination. It will also be necessary to determine the flow direction of the groundwater and whether it is in communication with the Grand Calumet River. Of particular concern to U.S. EPA are the following substances which may have contaminated the groundwater at the indicated disposal areas which were identified on the map included in your response:

1. Vanadium pentoxide, area 4.
2. Antimony pentachloride, area 5.
3. Calcium arsenate, area 8.
4. Lead arsenate, area 8.
5. Arsenic trioxide, area 8.
6. Dichlorobenzene/Chlorobenzene (by-product of the degradation of linuron), area 9.
7. Ammonium sulfamate (from cake filter disposal), area 9.
8. Sodium hydroxide (from precoat filter and hardtac waste), area 9.
9. Calcium hydroxide (present in hardtac, precoat and Freon Sludges), areas 9 and 10.



Airborne Emissions: Twelve of the substances disposed of at the East Chicago site are dangerous upon inhalation. It is necessary to determine whether any of the following substances may become airborne in any manner. The following list indicates air concentration limits prescribed for each substance in 29 CFR 1910.1000.

1. Ammonium sulfamate	15 mg/M <sup>3</sup>	(8-hours time weighted average) (8-hTWA)
2. Antimony pentachloride (as Sb)	0.5 mg/M <sup>3</sup>	(8-hTWA)
3. Hydrochloric acid	7 mg/M <sup>3</sup>	(Ceiling value)
4. Calcium arsenate	1 mg/M <sup>3</sup>	(8-hTWA)
5. Lead arsenate	0.15 mg/M <sup>3</sup>	(8-hTWA)
6. Arsenic trioxide (as As)	0.5 mg/M <sup>3</sup>	(8-hTWA)
7. Calcium fluoride (as F)	2.5 mg/M <sup>3</sup>	(8-hTWA)
8. Chlorobenzene	350 mg/M <sup>3</sup>	(8-hTWA)
9. Sodium hydroxide	2 mg/M <sup>3</sup>	(8-hTWA)
10. Silica	various formulae depending on form	(8-hTWA)
11. Vanadium pentoxide	0.5 mg/M <sup>3</sup> dust 0.1 mg/M <sup>3</sup> fume	(8-hTWA)
12. Zinc Oxide	5 mg/M <sup>3</sup>	(8-hTWA)

In addition, calcium hydroxide is considered to be an air contaminant as a dust, and calcium sulfate and sulfur have toxic and/or reactive fumes upon heating.

Process Information: It may be possible to assess the problems at specific disposal areas more fully if the amounts of some of the disposed wastes can be estimated. Additionally, it may be possible to further identify compounds existing in some of the areas. In order to accomplish this U.S. EPA is requesting information concerning process descriptions, raw materials used in production, and quantities of production for the following substances:

1. Zinc chloride
2. Aluminum chloride



3. Ammonium chloride
4. Those substances for which tank and process cleaning sludges were disposed of in area 4.
5. Calcium arsenate
6. "Ammate"
7. Benomyl
8. Siduron

Miscellaneous Information: Some further information which will be helpful in the continuing review of disposal at the East Chicago Plant is as follows:

1. Analysis of or information on the arsenic, vanadium, uranium, and uranium decay product concentrations in the phosphate rock used for trisodium phosphate production.
2. What "miscellaneous chemicals" may have been disposed of in area 4?
3. What chemical(s) was (were) used to neutralize by-product hydrochloric acid, and what other chemicals, if any, were contained in this acid (area 5)?

J.S. EPA is certain that E.I. duPont shares its concerns relating to the disposal practices in East Chicago. Your continued effort and cooperation in gaining a full assessment of the disposal area is greatly appreciated. Please feel free to contact either Jerrold Frumm, an attorney on my staff at (312) 353-2096 or William E. Munro an engineer on my staff, at (312) 353-2110 concerning the additional information requested in this letter.

Very truly yours,

Original Signed by Sandra S. Gardebring

Sandra S. Gardebring  
Director, Enforcement Division

cc: Oral Hert, Technical Secretary  
Indiana Stream Pollution Control Board

bcc: Bryson  
Fenner  
✓Grimes/Schulteis/Frumm  
Leder  
Munro/Miner

Region V, Solid Waste Management  
Kee/Klepitsch/Goldstein/Shandross

JFRUMM:tp:6-6727:8/18/80





# DuPont - East Chicago Plant

